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INTERNATIONAL BOUNDARIES



INVISIBLE AND VISIBLE BARRIERS AT INTERNATIONAL BOUNDARIES

Above: German-Polish boundary in Upper Silesia in 1934; the uncultivated strip between adjacent fields. *Below:* Palestine-Syria boundary; repairing "Tegart's Wall," erected in 1938 to control movements across the border.

Photograph from Pictures Inc.

INTERNATIONAL BOUNDARIES~*A Study of Boundary Functions and Problems*

By S. WHITTEMORE BOGGS

GEOGRAPHER, U. S. DEPARTMENT OF STATE

WITH

A FOREWORD BY ISAIAH BOWMAN

PRESIDENT, JOHNS HOPKINS UNIVERSITY



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FOREWORD

IT IS of capital importance that an analysis of boundaries should appear at this time when a boundary is once more regarded as a "mere voluntary halting place," to use Paul de Lapradelle's phrase applied to the European situation. To the people of Canada and the United States the markers on their common boundary line have become a symbol of coöperation, friendship, and mutually profitable trade; to European peoples boundary posts have become a symbol of separation of interests, injustice, fear. Africa and Asia are similarly involved. The Near East now has its "Tegart's Wall," a barbed-wire entanglement dividing Palestine and Syria!

One is inclined to say that the chief defect of any boundary is its definition, a quality that is indispensable in the modern world with almost every square mile of land occupied and desirable for production or site. The earliest boundaries, by contrast, were not lines but zones or border marches. The rulers and writers of Rome's imperial days, for example, had no conception of the modern boundary as a negotiated line. Land is still the chief national base and with it are associated investments, aptitudes, endowments, pride, sentiment, and commitments of established power. It follows that virtually all international interests must be brought into focus when a boundary is defined. Boundary *marking* is a surveyor's job but boundary *making* is a well-informed statesman's job. Historic ownerships are often irreconcilable, and mineral and forest wealth and crop land are divided unequally by the boundaries of any conceivable Europe. Finally, no one has yet found a way to reconcile those natural aversions of men that are based in part on differences of speech, religion, and blood.

Back of a boundary are not only national interests and ambitions but a philosophy of international relations. Is it possible

for the most altruistic treaty-makers to reject altogether the philosophy of power politics in a power-equipped world? Are small neutrals to be allowed to exist? When men criticize a boundary they do so from two quite different standpoints: (1) the technical location of a boundary, which may be good or bad in detail; and (2) the wisdom of putting together or keeping together the people and the resources that the boundary contains. Where is that wisdom to be found? How is it to be identified? Whose philosophy of union or separation shall rule? Is nationalism an outworn principle?

Nationalism, as a doctrine, was one of the volcanic ejecta of the French Revolution. Gooch adds that it filled the nineteenth century "with the insistent clamour of its demands." The evils of excessive nationalism were widely deplored in the period 1919-39. Clearly autarchy should bear the stigma of many of the sins that are attributed to nationalism, for nationalistic sentiment was aroused artificially in order to stimulate autarchy with still more remote and ominous ends in view. Economic and political forces are so complexly interwoven, psychological forces are so intangible and illogical, that it is easier to say "nationalism" and let one's analysis of troubles go at that. Boundaries are particularly vulnerable to attack by those who like their answers simplified because (a) a boundary is and has to be perfectly definite; (b) no boundary is or can be perfect, in the sense of being free of criticism, because it must include irreconcilable elements that have evolved side by side in a geographical space; (c) all boundaries have suffered historic changes that suggest "rectification" of a type to suit the book of ambitious nationalistic leaders.

Populations will still be unequal after new treaties take effect, folk will press upon folk, resources will be in a state of imbalance country by country. To add to the difficulty, the whole European continent is already anxious about its postwar prospects and livelihood. All peoples are asking anxiously, shall we win or lose? The tension will rise at the peace table—even higher than it stands in the present state of war.

These are some of the larger reflections that arise as one reads Mr. Boggs's excellent book. It would but repeat his own text to review the boundary problems, types, and solutions which he presents in the separate parts of his argument. It is tempting to do so if only because of the high intrinsic interest of his examples. The book could not have been produced at a more critical moment. Armies are on the march once more; historic and cultural claims are reasserted; a peace conference will ultimately attempt to contrive or improvise tolerable arrangements. Boundary-making will be an inevitable part of the process. A systematic account of types of boundaries and settlements, of principles and practices, will be indispensable to those who draw or validate the new or restored boundaries.

Some of the basic problems are graphically and even dramatically set forth in Mr. Boggs's line drawings. Figure 2, for example, is a sort of ideograph of present-day Europe: crowded populations, a profusion of boundaries, in short a house with narrow rooms. The frontispiece shows visible and invisible barriers; the end photographs commemorate peaceful solutions—Christ of the Andes, the Peace Bridge of Niagara, the Peace Arch at Blaine, Washington; old and new boundaries of ingenious types are illustrated; and the complicated boundary functions of modern times are suggested by photographs of toll gates, guards, customs buildings, uncultivated strips, and barbed-wire barriers.

Organized knowledge in fluid or accessible form is a first consideration in peace-making. Mr. Boggs's contribution will increase in value as the exigent questions of our day are confronted by the peace-makers. It is a credit to the Department of State that its geographer has produced a basic text on the intricate problems involved in boundary establishment.

ISAIAH BOWMAN

*The Johns Hopkins University
Baltimore, Maryland
February 10, 1940*

P R E F A C E

ACROSS more than 100,000 miles of international boundaries neighbors face one another today, some friendly, others suspicious or even hostile. Men are asking what boundaries are, how they work, and how current problems may be solved. In this brief introductory study, boundaries are considered from both larger and smaller aspects than those in which they are usually regarded: (1) larger, in order to observe how and why boundaries and boundary problems vary from continent to continent and from century to century; and (2) smaller, in order to perceive what actually happens at international boundaries and what functions they perform.

Each continent is found to differ appreciably from all the others in the origins of its boundary problems, in the manner in which its boundaries operate, or in the stage of development of its boundaries and their functions. No similar study by continents appears to have been attempted. The perspective gained by this approach to the subject may help to reveal why the boundary problems of Europe are so much more acute than those of any other continent and how greatly they differ in nature, as well as in degree, from those of the New World.

There are pressing boundary problems in several continents; to be solved effectively they must be solved peacefully. When new boundaries are made, widely divergent opinions may be expressed regarding desirable and undesirable types of boundaries. A common-sense viewpoint is that whether a boundary is "good" or "bad" depends upon whether it is adapted to serve the purposes for which it is maintained, with maximum efficiency and minimum friction and expense. To understand the contemporary problems it is therefore necessary to ascertain what happens because the boundaries are there and because of the prevailing ideas regarding the purposes which they should serve.

The several chapters of this book were prepared for classroom use as part of a course on Current Geographical Problems given at Columbia University during the 1939 summer session. Because of the timeliness of the subject, their publication was suggested. The original lecture on the boundaries of the United States has been expanded into two chapters: the first illustrates problems of boundary-making which are characteristic of the New World; the second shows how the boundaries of the United States operate and thus provides a basis for comparison with boundaries in other parts of the world. The chapter on water boundaries has been inserted. Maps and appendices have been especially prepared and photographs selected for this volume.

None of the controversial boundary problems in any part of the world are discussed. Presenting the subject of international boundaries in a brief series of classroom lectures left no time for the perplexing problems of particular frontiers. No change has been made in the text of the lectures on account of the subsequent outbreak of war in Europe. Reference to the conflagration and to the intensification of boundary problems which it entails would detract from consideration of the manner in which international boundaries operate and of the means of solving present problems.

Grateful acknowledgment is made of assistance received from many sources. Professor A. K. Lobeck has been most helpful in connection with the class lectures and the publication of the book. Dr. Richard Hartshorne has made constructive criticisms of all the chapters, especially in the matter of classification and terminology of boundaries. Colonel Lawrence Martin, Dr. Hunter Miller, and Mr. Chapin Huntington have read the entire manuscript and have contributed valuable suggestions. The Honorable Thomas Riggs and the Honorable L. M. Lawson, the American boundary commissioners, have generously assisted in the study of the United States boundaries. Dr. Preston James and Dr. Robert S. Platt have given me the benefit of their criticism of the chapter on South American boundaries. Dr. Emory Ross has furnished valuable data regarding African boundaries.

Mr. W. L. G. Joerg has made valued suggestions relating to Appendix B, as well as to certain chapters. The American Geographical Society has kindly given permission to reprint the chapter on water boundaries, which was first published in *The Geographical Review*. Miss Mildred Prinzing and others at the Columbia University Press have been very helpful in making a book from the original lecture material. Nearly all the maps and diagrams have been drafted by Mr. F. Irvine Burnham.

But however much he is indebted to these friendly advisers and to many others who have assisted in some way in the making of this book, the author alone is responsible for all that is presented in the following pages.

S. WHITTEMORE BOGGS

Chevy Chase, Maryland
January 25, 1940

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INTERNATIONAL BOUNDARIES

Chapter I

THE CHANGING ROLE OF BOUNDARIES IN A CHANGING WORLD

IT IS EASY to be hypnotized by a map, especially a political map. Map makers use a conventional symbol for all international boundaries, and uniform colors for the land surface of each country. To most people, frontiers look alike and are assumed to be alike—except as it is supposed that they may be classified according to some simple scheme, such as natural and artificial boundaries.

The tourist crossing the international frontier presents his precious passport, may hear the uniformed officials confer in a language which he does not understand, and may be baffled by questions which are asked concerning cigarettes, chocolate, or money that he carries, wondering whether he will get through in time to catch the next train or boat. Sometimes he is uncertain whether he will be admitted at all. Few people cross many boundaries, and when they compare one boundary with another they naturally consider their own personal experience; they usually have little opportunity and less inclination to perceive the many functions which boundaries serve today and to discover what the boundary means in the lives of the people concerned, especially those who live nearest to the frontier.

Furthermore, it is generally understood that nationals in all parts of the world are essentially on a par within their frontiers, for example in legal proceedings such as international arbitration cases and in regard to questions affecting the frontiers themselves. Consequently, it is only natural that the role played by international boundaries is commonly assumed to be uniformly simple and static.

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A moment's reflection will challenge that concept. If one considers the social and cultural differences the world around, it will be recognized that the effect of the boundary upon the life of adjacent populations must somehow differ, for example, in the United States-Canada boundary area, the Libya-Tunisia frontier region, and the China-Burma frontier region in areas inhabited by unadministered tribes. The international problems and the geographical aspects of those problems which we shall consider will therefore be found to vary from place to place at any given period in history.

It will also be appreciated that the functions which are served by a given boundary may change with the passing of time. The United States-Canada boundary in the vicinity of Detroit, Michigan, presents problems which are very different today from those of a hundred years ago, as the role of the boundary has changed with increasing population and industrialization. There is even no sharp line of division between the functions of international and internal boundaries. The United States Supreme Court determines boundary questions between the several states according to principles of international law, in so far as they are found applicable.¹

It is difficult for Americans to comprehend why boundary problems in other continents are so acute, why some obscure frontier incident may involve hundreds of millions of people in the devastation of war the effects of which would ultimately be felt even in the most remote regions of the neutral countries. We in the United States have seventy-five hundred miles of boundaries with Mexico and Canada (including the Alaska frontier), and none of these boundaries is militarized. Why should there be so much friction over boundaries elsewhere? What may be learned from an examination of the geographic aspects of boundaries in all parts of the world?

¹ "As it is impossible to identify any channel in the bay as that indicated by the Acts referred to, the intention of Congress must be otherwise ascertained. By principles of international law, that apply also to boundaries between States constituting this country, it is well established. . . ." *Wisconsin v. Michigan*, *U. S. Supreme Court Reports*, Vol. 295, p. 461.

THE ROLE OF MODERN INTERNATIONAL
BOUNDARIES

In those parts of the world where international boundaries seem most to threaten peace and security, what purposes or functions do they serve? What happens at the boundary lines?

"Switzerland is bounded on the north by Germany, on the east . . ." and so forth, as we used to recite in our geography classes. The significance of international boundary lines today is that they bound or delimit the territory within a single national jurisdiction. "The State frontier is that line which marks the limits of the region within which the State can exercise its own sovereign Right."² The location of the boundary may therefore determine for millions of people the language and the ideas which children shall be taught at school, the books and newspapers which people will be able to buy and read, the kind of money they shall use, the markets in which they must buy and sell, and perhaps even the kinds of food they may be permitted to eat; it determines the national culture with which they shall be identified, the army in which they may be compelled to serve a term, the soil which they may be called upon to defend with their lives whether or not they would choose to defend it.

In some instances, the international boundary is a wall within which one brand of propaganda is confined and against which another is supposed to beat ineffectually. The boundary may serve as a sort of color filter to prevent the infiltration of ideas and ideologies of supposedly different hues; thus books and newspapers must pass inspection before they are permitted to cross the invisible, artificial line. Geographers want to know what the surface of the earth is like, and explorers and surveyors are sent, sometimes at great expense, to obtain new and precise knowledge of the earth on which we live; and yet the vision of a bird soaring above the earth is denied to foreigners, and cameras, particularly those carried by airplane passengers, are sealed and occasionally confiscated at the international boundaries.

² Adami, *National Frontiers*, p. 3. (Throughout the present volume, short titles are used for references. The full titles appear in the Bibliography, pp. 249-60.)

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International boundaries are thus sharply defined lines, fixed by nations like fences between their respective properties. In nature, however, there are no sharply marked boundaries of any sort, only zones of transition.

Nature abhors fixed boundary lines and sudden transitions; all her forces combine against them, everywhere she keeps her borders melting, wavering, advancing, retreating. If by some cataclysm sharp lines of demarcation are drawn, she straightway begins to blur them by creating intermediate forms, and thus establishes the boundary zone which characterizes the inanimate and animate world. . . .

The habitable area of the earth everywhere shows its boundaries to be peripheral zones of varying width, now occupied and now deserted, protruding or receding according to external conditions of climate and soil, and subject to seasonal change.³

It is not surprising, therefore, that many international boundaries traverse zones of mixed populations; and, although the limits of national jurisdiction are exactly fixed and marked, along some boundaries there is a distinct "feel" of the frontier zone of which the stranger becomes aware. There are bilingual populations, and there are families whose livelihood depends upon the boundary services which some of their members render to the state. In the frontier zone there may also be others who attempt to make a living by circumventing the laws of one or the other state.

In spite of the efforts of the two contiguous countries, each to stamp its language and culture indelibly upon every family and every square mile of its territory, the unity within the zone through which the boundary passes sometimes exceeds the unity between the boundary population and distant people of the same nationality. This is the natural result of geographical factors and of such human factors as family relationships and social contacts.

EVOLUTION OF MODERN BOUNDARIES

The functioning of international boundaries throughout the world today is largely the outgrowth of nationalism as it de-

³ Semple, "Geographical Boundaries," pp. 385, 387.

veloped in Europe, especially within the last two centuries. The earliest boundaries were not lines but zones or border marches. As population gradually increased, pressure upon the border marches resulted in narrowing them until they finally disappeared altogether.

Paul de Lapradelle distinguishes between self-imposed *limitation* of domain as a voluntary act of the Roman Empire and *delimitation* of territory by mutual agreement between two sovereignties. Following is a translation of part of his text on "The International Frontier (Confrontatio)" from his book *La Frontière* (pages 25-26):

The problem of the modern frontier, a delimitation of equal jurisdictions, is inconceivable in the imperialistic stage of a powerful and solitary State. On the confines of civilization and barbarism, there is no other policy than that of the frontiers. If limitation, a unilateral operation, can exist, delimitation, a conventional operation, can not begin.

Neither the Roman Empire nor the Frankish Empire had any conception of the modern boundary. The *Limes imperii* is not the result of an agreement, even an imposed agreement, but a mere voluntary halting place. The frontier, introduced into internal public law, is a régime of unilateral territorial organization; it does not yet have a place in international public law.

Such a conception of the modern boundary, presupposing equal jurisdictions, could be applied only in the interior of the imperial framework, and not at its periphery.

Delimitation is a Carolingian institution. It was born, in a transition period, between Latin unity and feudal distribution, by the introduction of the Germanic principle of Frankish partition into the surviving framework of the Roman *Universitas*.

The maps of Asia and the Americas in the atlases of the seventeenth century, and maps of Africa as recently as the middle of the nineteenth century, seldom attempted to represent more than occasional rudimentary boundaries. In fact, the map maker's desire to make his map artistically complete has been partly responsible for indicating hypothetical boundaries where none had yet been specifically defined.⁴

⁴ Numerous illustrations could be given of maps on which undefined boundaries were represented as if they were already established. Maps of Africa frequently

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The background of the historical changes in political concepts and organization that have been in part responsible for the evolution of boundary functions is thus expressed in a little volume on *Nationalism* by George P. Gooch:

. . . While patriotism is as old as human association and has gradually widened its sphere from the clan and the tribe to the city and the state, nationalism as an operative principle and an articulate creed only made its appearance among the more complicated intellectual processes of the modern world. The august conception of the unity of Christendom under the joint sway of Emperor and Pope was almost as unfavorable to national differentiation as had been the universalism of the Roman Empire; and though the latter centuries of the Middle Ages witnessed the steady growth of national consciousness . . . it was not until the political and religious system of mediaeval Europe went down before the combined assaults of the Renaissance and the Reformation that the sovereign state emerged as the dominant type of political organisation. In the fulness of time the doctrine of nationalism issued from the volcanic fires of the French Revolution, carrying its virile message of emancipation and defiance to the uttermost parts of the earth, and filling the nineteenth century with the insistent clamour of its demands.⁵

The fact that international boundaries are not universally accepted, however, is evident in the frequent destruction of the boundary monuments by primitive tribes whose territory is partitioned by distant powers. It was true even of the interstate and international boundaries of the United States, which were sometimes destroyed by the Indians. Speaking of the demarcation of the boundary between Turkey and Persia, Colonel Ryder remarked, "The fixing of a frontier was however repugnant to the finer feelings of the Kurds. . . ." ⁶

Nor are neutral zones entirely a thing of the past. Examples today may be seen at Gibraltar and in northern Arabia. The buffer states of Asia are not unlike neutral zones.

Among the factors that have greatly modified the character

bore conventional boundaries of Libya, for example; and many maps of South America today show a boundary between Ecuador and Peru, although no line has been agreed upon by the countries concerned.

⁵ Page 5.

⁶ Ryder, "Turco-Persian Boundary," pp. 234-35.

and operation of boundaries are the constant growth of population in most parts of the Old World for centuries, the revolution of means of communication and transport, and the extraordinary increase in demand for important resources within recent decades. Compare, for example, the consumption of iron, copper, manganese, tin, petroleum, and rubber with that of even fifty years ago. Even the increased per capita use of water, which is dependent upon modern engineering, has created many problems in relation to international boundaries, due to the diversion of boundary waters for irrigation, hydroelectric power generation, and the supply of the needs of great cities. In order to realize the changed situation regarding water, recall that it was formerly used almost wholly for drinking and cleansing and for such irrigation as was then possible. Many centuries ago theologians discussed how often a man might take a bath without being guilty of sin, and once a year was admitted; the luxury of a bath is today attested by the hotel bill in many parts of the world.⁷

In order to obtain a clear conception of present-day international boundary problems, boundaries will be considered in both larger and smaller aspects than usual. The continents will be compared with one another to see how their international boundaries differ. Note will also be taken of some small details of boundary operation which are typical of the areas in which they are to be observed, in order better to perceive the influence of the boundaries upon the lives of the people who live near them and upon the policies of the nations concerned.

THE FUNCTIONS OF MODERN BOUNDARIES

At the international boundary the state may exercise over persons and things a control which may range from either casual laxity or intentional liberality all the way to the utmost rigidity. These boundary functions⁸ may be classed as follows:

⁷ Smith, *Economic Uses of International Rivers*, pp. 1-2.

⁸ I have here drawn freely upon my paper on "Boundary Functions and the Principles of Boundary-making," delivered before the Association of American Geographers on Dec. 31, 1931, and published in *Press Releases*, U. S. Dept. of State, Jan. 2, 1932. Now out of print.

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(1) *In respect of persons*: restriction or even total exclusion of immigrants, visitors, and workmen from foreign countries, because their competition for work and bread is not desired, because their race, their religion, or their political ideas are unwelcome, or for any other reason; restriction or even prevention of contact of a state's own nationals with the nationals of other nations, for any reason; examination and detention of persons with communicable diseases, both of domestic and foreign citizenship; apprehension of criminals and fugitives from justice; and apprehension of persons engaged in illegal movement of things, especially in smuggling;

(2) *In respect of things*: the collection of duties and taxes of legally imported or exported goods; the prevention of illegal movements of goods; prevention of the influx of foreign goods in competition with those of domestic production; control of the movement of money and the precious metals across the frontiers; control of the flights of airplanes across any portion of the national territory; the exercise of sanitary measures, such as plant and animal quarantine.

An international boundary constitutes a wall or a partition between the peoples on opposite sides.⁹ If no boundary were there and if the authority of the state were not manifest, the people would mingle freely, would visit relatives across what is now the frontier, and would trade with one another regardless of whether or not they speak the same language. The international boundary, however, is administered and guarded; passports or border cards must be shown, customs duties must be paid. Any boundary is permeable to some extent, and consequently a sort of osmosis takes place. When the tariff wall is low, there is little occasion for smuggling. But the osmotic pressure increases if the customs duties are greatly increased. When, for example, the importation

⁹ See Staley, *World Economy*. The index contains numerous references to boundaries. Regarding "goods and boundaries," "capital and boundaries," "persons and boundaries," and "knowledge and boundaries," see pp. 37-50. The treatment that would be accorded a shipment of ordinary cotton yarn and cotton cloth as it crossed international boundaries on a world travel is indicated under different classifications, by countries, pp. 37-38.

of certain drugs is strictly prohibited except for medicinal purposes, smuggling becomes highly profitable when it is successful.

Functions of boundaries are in general negative rather than positive. To at least some degree they restrict the movements of peoples and the exchange of goods, of money, even of ideas. If the boundaries are simple administrative boundaries, as between minor civil divisions, they restrain very little. International boundaries are intended to serve protective functions of various kinds. They can not promote trade or human intercourse, as is sometimes contended.¹⁰

Specific illustrations of many boundary functions should be studied in relation to various boundaries, in order that the almost unimaginable multiplicity of boundary restrictions in some parts of the modern world may be better understood.

Problems may arise in connection with any or all of the functions indicated above which may produce friction and administrative difficulties and which may call for diplomatic negotiation. In addition to these types of functional problems, there are others which sometimes arise when the boundary follows or intersects a river or other body of water. The principal problems of boundary and adjacent waters relate to control or restriction of the rights of navigation; control or restriction of the rights of fishing; division of waters available for domestic water supply, for irrigation, or for the generation of power; and sanitary protection and the prevention of the pollution of waters.

In addition to the peacetime functions of boundaries, the possible functions of military defense must be considered. The importance of the military aspects is emphasized by many writers. Colonel Sir Thomas Hungerford Holdich, widely experienced in the settlement of boundary disputes, wrote:

Assuming that the primary object in defining a frontier is to set up a defensive partition between contiguous States which shall prevent mutual trespass or illegal expansion into either territory, the

¹⁰ Lyde, *Some Frontiers of Tomorrow*, proposed that boundaries be placed where peoples meet in the ordinary routine of peaceful intercourse (p. 2) and that the functions of boundaries should be assimilative.

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actual boundary of that frontier is designed either to settle immediate disputes, or, in the case of conquered territory, it is to prevent future complications of an aggressive nature. Consequently two important strategic factors are usually employed which will tend to ensure this result. These are the construction of defensive forts and of strategic railways.¹¹

Much is written and spoken concerning the strength or weakness of particular boundaries from a military viewpoint. The "demilitarization" of boundaries is a frequent subject of treaty negotiations. It is not easy to ascertain just what stretches of boundaries have been fortified or militarized, but it is certain that most of the boundaries of the world are not fortified and that many of the nonmilitarized boundaries are among the most stable in the world.

COMPARTMENTIZATION OF THE CONTINENTS

In any consideration of boundaries in their larger aspects, one of the most important is the comparative extent of the cutting up of the several continents into national compartments, separated by boundaries which serve as so many fences of different height and different permeability. No indices have been devised for such analysis of the relative compartmentization of the continents. And no numerical indices can do more than provide concrete figures which may be critically examined to see what significance they really have. Although conditions vary widely within each continent, the differences between the continents are sufficiently great to give validity to significant generalizations that may be made from the following data.

Table 1 shows, in the first column, the approximate number of miles of boundaries for every one thousand square miles of area in each of the continents. This would seem to be a fairly satisfactory index in measuring the extent to which international boundaries subdivide the continents into compartments or segments.

¹¹ Holdich, *Political Frontiers*, p. 128.

TABLE 1

INTERNATIONAL BOUNDARIES AND APPROXIMATE MEASUREMENT OF THE CONSEQUENT COMPARTMENTIZATION OF THE CONTINENTS ^a

	Miles of bdy. ^b per 1,000 sq. mi. of area	Miles of bdy. per 1,000 sq. mi. of area, multiplied by the pop. per sq. mi.
Europe (Iceland omitted)	4.0	480
Europe except the USSR (omitting the <i>bdies.</i> of the USSR with its five European neigh- bors, and the <i>area</i> of Eur. USSR)	7.3	1,400
Asia (Philippine Is. omitted)	1.6	120
Asia except the USSR (omitting the <i>bdies.</i> of the USSR in Asia and the <i>area</i> of Asiatic USSR)	1.7	190
Africa (Madagascar omitted)	2.5	32
Africa, omitting the boundaries of the Union of South Africa with other British territories	2.4	30
North America (including Central America and the West Indies, but omitting Green- land)	1.3	27
North America, omitting the boun- dary of Canada with Labrador .	1.1	23
South America	2.7	33

^a See Appendix A for the measurements upon which this table is based.^b The measurements of the international boundaries are derived, in almost all cases, by tracing their courses on maps of moderate scale with a measuring instrument. The lengths used in making the computations indicated in this table are doubtless underestimates of actual length, in some instances, but the figures are believed to be approximately correct and to be comparable. The boundary *lengths* do not include seacoasts, as they are only national, not international, boundaries. The *islands* named as being omitted from consideration are those on which there are no international boundaries and which are therefore excluded from the *areas* taken into account in computing "miles of boundary per 1,000 sq. mi. of area."

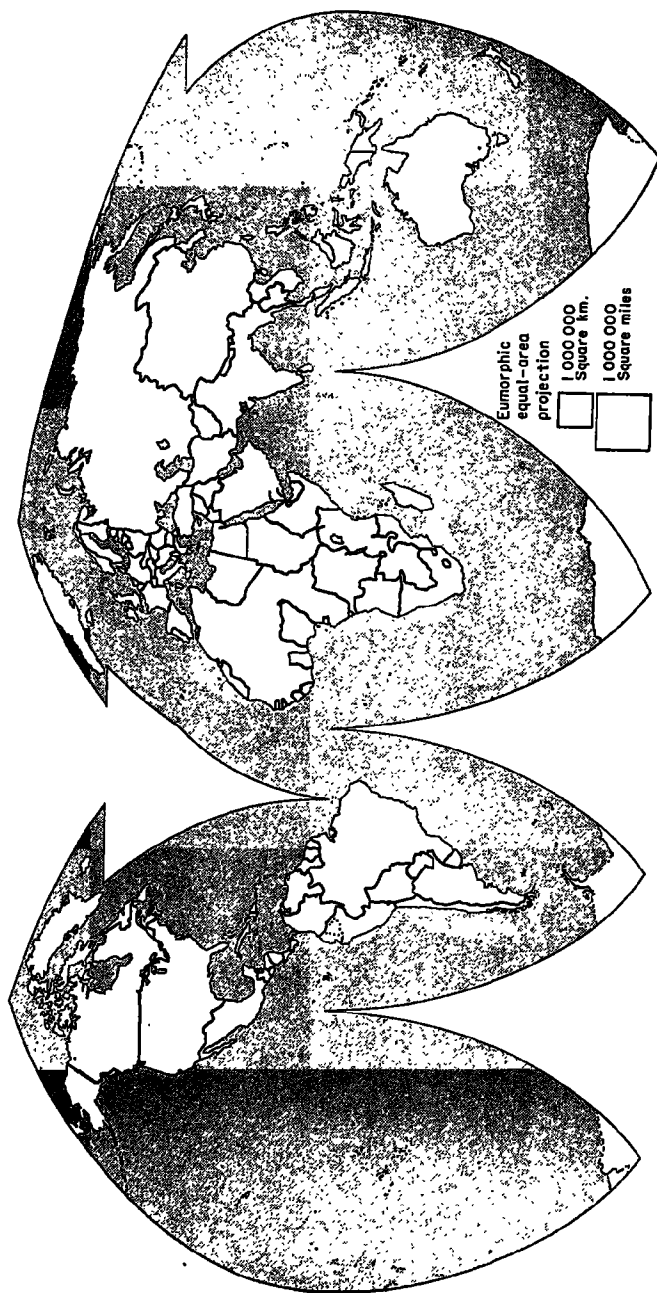


FIG. 1. THE WORLD: INTERNATIONAL BOUNDARIES IN 1937
The shaded bars on Fig. 2, representing the areas of the continents, are on the same area scale
as this map.)

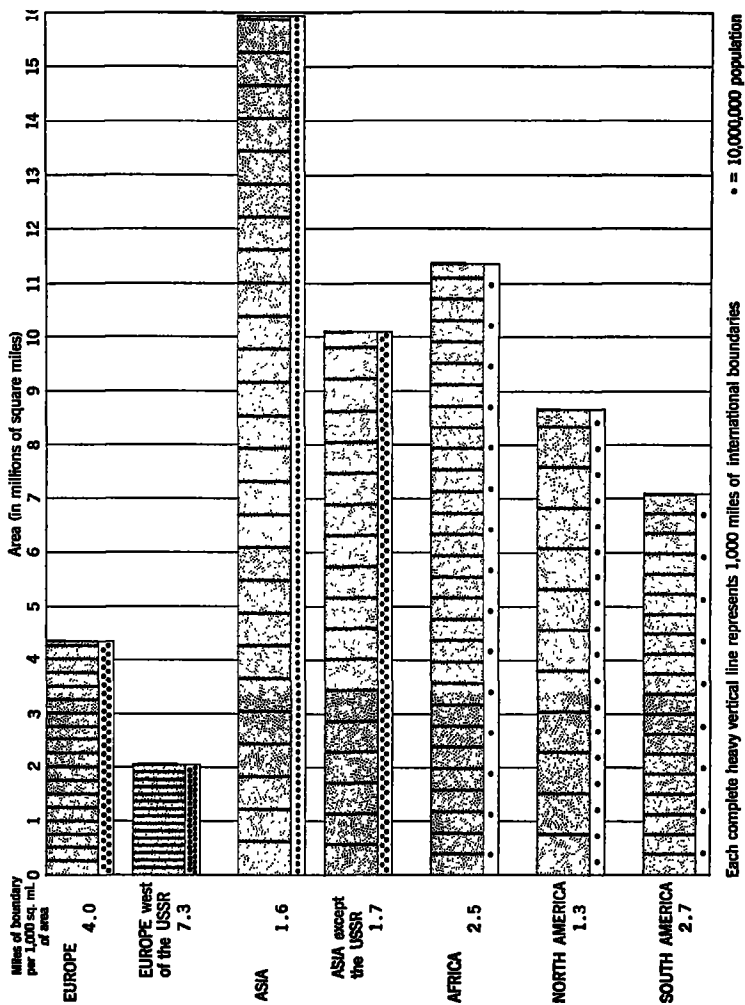


FIG. 2. DIVISION OF THE CONTINENTS INTO NATIONAL COMPARTMENTS

The continent of Europe, with approximately four miles of boundary for each thousand square miles of area, is thus found to be the most dissected continent, in proportion to its size—about fifty percent more segmentized than is South America, which ranks second, and more than three times as much divided as North America, which ranks lowest in dissection by boundaries. If we take only that part of Europe that lies west of the Soviet Union, omitting both the area of the Soviet Union and the Soviet boundary with its five European neighbors, it is found that continental Europe west of Russia has about seven and three-tenths miles of boundary for every thousand square miles of territory, which is several times as great as the index figure for any other continent.

Other things being equal, the greater the population density, the greater will be both the pressure upon the boundaries and the complexity of the problems that arise from their presence. There is no reason to suppose that boundary problems vary in direct ratio to the population in a given area (which means in proportion to the population density). However, if we multiply the number of miles of boundary per thousand square miles by the population per square mile, we obtain as a tentative index the figures shown in the second column of the table.

This may be regarded as a provisional index of the interruptive factor—the nuisance effect—of boundaries, as distinguished from the measurement of simple compartmentization in the first column. The figure of 480 for continental Europe ranks well above 120 for Asia, 33 for South America, 32 for Africa, and 27 for North America. Omitting Russia, the figure for Europe is 1,400 and for Asia it is 190.

This table confirms the impression that Europe is the continent that has the greatest reason to be suffering from its boundary problems. Neither column appears to give a picture which corresponds with boundary actualities. The multiplication by the population density produces a figure that is excessive for the interruptive effect. Somewhere between the figures in the two columns it would seem that there might be a better index to the

relative complexity of the boundary situations by continents today. Without giving further attention to the development of an appropriate index of this sort, however, the significance of the situations which they crudely represent we will consider later, as we review the boundaries of each continent separately. The manner in which boundaries operate, the height of tariff walls, the restrictions upon movements of people are even more important than the mere extent of boundaries.

DIFFERENCES IN ORIGINS OF BOUNDARY CONTROVERSIES

The stages of evolution of boundaries vary from continent to continent, and the role of the boundaries likewise varies. Because of broad historical differences, which are rather generally overlooked, there are fundamental dissimilarities in the origins of boundary controversies in the several continents.

By and large, boundary disputes in the New World and, to a lesser extent, in Africa have arisen because too little geography of the country was known at the time when the boundary was fixed by treaty or on early and inaccurate maps. Such deficiencies may be remedied by surveying before attempting to establish a definitive line or by treaty or arbitral award.

Boundary disputes in Europe, on the other hand, arise in many instances because too much history is remembered by both parties concerned. Such problems can not be solved by any such simple means as making an accurate map, but require calm, dispassionate consideration of the present factors and the changing role of boundaries.

Chapter II

CLASSIFICATION AND TERMINOLOGY OF BOUNDARIES

PERHAPS in no important subject are the source materials more voluminous, more diverse in character, and more widely scattered in libraries and in the archives of governments than in the matter of international boundaries. In the settlement of boundary disputes and the establishment of boundaries, the documentary materials that are amassed in the foreign offices as the records of diplomatic negotiation, the decision of international courts or tribunals, or the award of arbitrators are enormous; yet they constitute only one general class of original materials. Another class comprises the surveying and mapping records and the geodetic computations of engineers, with their field notebooks, journals, records of expenditures, and so forth. These together constitute the principal source materials of boundary literature.

In addition, geographers, historians, political scientists, international lawyers, and other specialists have made many contributions to the subject, in specialized periodical literature and in volumes on scores of specific boundaries and on many subjects, which are therefore widely dispersed in any library. Unfortunately, there is no comprehensive bibliography on boundaries.¹

Concerning the paucity of boundary literature and the small number of men who are experts in the subject, Lord Curzon, in 1907, observed:

¹ The bibliography on pp. 249-60 comprises author entries for most of the publications cited in the text and footnotes of this book, together with a limited number of additional entries to make it more balanced and representative. No attempt has been made to provide an exhaustive list of citations to available literature in the general field of boundaries, and very little is inserted relating to particular boundaries.

It is a remarkable fact that, although Frontiers are the chief anxiety of nearly every Foreign Office in the civilized world, . . . there is yet no work or treatise in any language which, so far as I know, affects to treat of the subject as a whole. Modern works on geography realize with increasing seriousness the significance of political geography. . . . A few pages are sometimes devoted to Frontiers in compilations on International Law, and here and there a Frontier officer relates his experience before learned societies or in the pages of a magazine. But with these exceptions there is a practical void. You may ransack the catalogues of libraries, you may search the indexes of celebrated historical works, you may study the writings of scholars, and you will find the subject almost wholly ignored. Its formulae are hidden in the arcana of diplomatic chancelleries; its documents are embedded in vast and forbidding collections of treaties; its incidents and what I may describe as its incomparable drama are the possession of a few silent men, who may be found in the clubs of London, or Paris, or Berlin, when they are not engaged in tracing lines upon the unknown areas of the earth.²

BOUNDARY REALITIES AS A BACKGROUND FOR CLASSIFICATION

Before proceeding to the consideration of specific boundaries in the several continents, it is important to make sure that the words we use have definite meanings and that the classifications of boundaries bear significant relation to realities. Boundaries are frequently the subject of misunderstanding, and friction developed at frontiers may ignite passions. It is essential, then, to employ terminology with precision, in order to avoid misunderstanding.

In discussing international boundaries, it should never be for-

² *Frontiers*, pp. 4-5. The number of important contributions to the literature on boundaries antedating Lord Curzon's Romanes lecture at Oxford in 1907 was greater than appears to be implied in the latter part of the paragraph quoted above. On this point see Hartshorne, "Recent Developments," p. 945, footnote 88, with special reference to the German literature. The aptness of the remark, ". . . there is yet no work or treatise in any language which, so far as I know, affects to treat of the subject as a whole," depends upon the interpretation placed upon the last clause. The subject as a whole embraces the history of boundary concepts and functions; the diplomatic, legal, and engineering aspects of boundary making; the geographical study of rivers, mountains, geometrical lines, linguistic frontiers, and other types of boundaries; and the settlement of boundary controversies. Such a comprehensive study of boundaries would appear to require the collaboration of scholars in several fields.

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gotten that boundaries are lines that are located, or to be located, with exactitude on the earth's surface and that they are potent with human significance, especially for those who live nearest to them.

Some boundaries or portions of boundaries are today defined only on paper, that is, in treaties, arbitral awards, and other documents. Others are demarcated on the ground, though sometimes the monuments or marks are spaced far apart. But, according to the most approved practice, monuments should be so placed that from each monument at least the nearest one in both directions is visible; the monuments are then said to be "inter-visible." To mark the boundary more clearly and to make the monuments intervisible, it may be necessary to cut down the trees and brush at frequent intervals, or, as they say, "to keep the vista open."

In many places international boundaries traverse extensive farming regions, and on such frontiers the majority of the monuments may be square stones that stand perhaps a foot above the ground. There may be a continuous narrow strip of unplowed, grass-covered land, with no fence of any kind for miles, as I have seen on the German-Polish boundary in Upper Silesia. Where roads are intersected by the frontier they are closed by gates, and traffic that is allowed to cross the boundary is usually confined to a few roads, rather far apart. Many boundaries cut across individual farm properties, and special regulations may allow a farmer to cross from one part of his farm to the other in order to harvest his crops and transport them across the line to his barn.

Upon crossing an international frontier at some points, however, we may be able to observe differences in the cultural landscape, visible characteristics of human occupancy of the region—for example, in the profusion or paucity of flowers, in the fields, gardens, and livestock, in house construction and materials, in road conditions, and in other definitely human factors. But such differences may usually be noted only along a boundary of considerable age and exceptional character. In nature itself there are no such sharp lines.

In any area in which the boundary has been subject to change, almost any vote or plebiscite³ in territory adjacent to the international boundary would show that some people would prefer that the boundary be shifted to the other side of their village or their farm. In other words, their affiliations, which are usually divided and which involve people on both sides of the line, are chiefly with residents in the neighboring country, and without moving their homes they would like to have their nationality changed by a change in the boundary. But many, probably the great majority, of those living near the international boundaries would say, "We are working out things with the boundary as it stands; leave us alone and let us make it work better. Make it less burdensome for us to go and come among our friends, to trade, to go sightseeing. Why do people at the capital of our country have to tell us that we can't visit our cousins a mile or two across the invisible fence, or take them butter and eggs, or attend a funeral, without permission? Why must we always carry identification cards with our photographs attached, containing a list of a few restricted places where we may cross, and that only in the daytime? We can go among our friends and can buy and sell as we choose on one side of the line. Why can't we be trusted to do the same on the other side?"

One of the principal reasons for making any study of boundaries is the desire to determine what kinds of boundaries have proven to be "good" boundaries and which have been found to be "bad" boundaries. It should hardly be supposed, however, that one type or kind of boundary would constitute the most perfect frontier for all purposes.

It should be remembered . . . that the general functions of most international boundaries most of the time, and of all internal and some international boundaries all of the time, are peace-time functions. The common-sense view, therefore, is simply that a good boundary is one which serves the particular purposes for which it is designed, with a maximum of efficiency and a minimum of friction.

³ Regarding plebiscites, see Wambaugh, *Monograph on Plebiscites and Plebiscites since the World War*.

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On the principle that a good boundary is one which functions well and a bad boundary is one which functions poorly, a scientific study of boundary principles should be based upon the actual working of all types of boundaries, and should correlate all geographic factors with the actual purposes which the boundaries serve and the degree of success with which they function.

Instead of attempting to lay down general principles which should govern in respect of all boundaries, therefore, principles should be formulated with reference to the types of geographic boundaries which are adapted to different sets of boundary functions.⁴

In order to analyze boundaries, to discover any correlation between those that have remained most stable and the types or kinds of boundaries to which they belong, it will be essential to attempt to answer the question "What kinds of boundaries are there?" before inquiring "What kinds of boundaries have worked most satisfactorily over considerable periods of time?"

CLASSIFICATION OF BOUNDARIES AND BOUNDARY TERMINOLOGY

The term "boundary" denotes a line, such as may be defined from point to point in treaty, arbitral award, or boundary commission report. A "frontier" is more properly a region or zone, having width as well as length.⁵ It is sometimes used alternatively with "boundaries" to avoid too frequent repetition of that term; and in most instances it is so used in the following pages.

"International boundaries" comprise all boundaries between two nations, whether they traverse land, rivers, lakes, or arms of the sea through territorial waters out to the high sea. They do not include seacoasts; the seaward boundaries of the territorial waters of a state are national, not international, boundaries.

Natural and Artificial Boundaries

The oldest classification, and the one most widely employed until recent years, is the grouping of all boundaries in two categories, "natural boundaries" and "artificial boundaries."

⁴ Boggs, "Boundary Functions."

⁵ It is definitely used in this sense by Fawcett in his *Frontiers*, pp. 5-6.

Lines which are marked by nature, such as mountain crests, rivers, and shore lines of lakes and seas, have long been utilized in establishing "natural" or "geographical" boundaries. Greek and Latin writers expressed their opinions in favor of "natural" boundaries. Records of Roman organization of the provinces within the empire show that they almost invariably established for them boundaries which were fixed by nature.⁶

Boundaries which are not marked by nature and which must therefore be marked on the ground by means of stones or monuments placed by man have likewise been known as "artificial" or "conventional" boundaries.

The confusion that may arise from the use of terms which are of wide and varied meaning is illustrated in the term "natural boundaries." The adjective "natural" is unfortunate. Simply because a line is marked by nature does not necessarily imply that it is a "natural" thing to utilize it for boundary purposes or that it may constitute a desirable or "natural" line of separation between neighboring peoples. A political scientist has remarked that a "natural boundary" becomes simply that natural feature somewhere beyond a state's present political boundary to which its leaders would like to expand.

A mountain chain may, of course, serve satisfactorily as a boundary already fixed by nature. It may be well adapted to the administrative necessities of both states concerned. Mountain people, however, tend to occupy both sides of the mountains, and the mountains comprise a zone or belt, not a single range or crest. Where peoples of the same language and tradition live on both sides of the mountains, therefore, especially in areas of relatively dense population, a so-called natural boundary along the crest of the mountain may not seem natural and desirable to the people who live there.

Rivers offer fewer advantages as boundaries because they frequently serve as highways of commerce and travel, and a river basin is commonly inhabited by the same peoples or tribes. The ancient civilizations in Egypt, Mesopotamia, India, and China

⁶ Adami, *National Frontiers*, p. 4.

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have been called "fluvial civilizations." Usually well marked by nature, though subject to shifting, rivers may or may not be regarded as "natural" boundaries,⁷ depending locally upon the river and upon the connotation of the term "natural."

Lapradelle says that in our day there are no longer any except artificial boundaries. He does not regard rivers and mountains as features which it is "natural" to adopt for boundary purposes; instead he calls them "derived artificial boundaries" ("limites artificielles dérivées"). What have commonly been called "artificial boundaries," such as astronomic boundaries, parallels of latitude, meridians of longitude, and the like, he calls "artificial boundaries properly speaking" ("limites artificielles proprement dites").⁸

Leading German political geographers, notably Sieger, followed by Maull and Sölch, ban the term "natural boundaries" from scientific literature.⁹ This is not to discard all reference to the boundaries which have for generations been called "natural boundaries." Such boundaries exist, but it is necessary to employ more definitive terminology. Fawcett uses the term "natural barrier frontiers" as applied to seas, deserts, mountains, forests, and swamps.¹⁰ Sölch uses the same term ("Naturschränkengrenzen"). Sieger suggests "boundaries borrowed from nature" ("naturent-

⁷ Regarding "natural boundaries" see Hartshorne, "Nature of Geography," pp. 45-47; see also pp. 45, 57, with reference to "dry boundaries" (watersheds) and "wet boundaries" (rivers). See Figure 8 (p. 70) for an example of a boundary in a shifting river.

⁸ *La Frontière*, p. 175.

⁹ Hartshorne, in his article on the terminology of political boundaries, discusses recent German usage and adds suggestions of his own. Among these is the classification of natural divides between areas or regions in which there is a perceptible cultural difference from the "static aspect" of features that account for "unpopulated or sparsely populated areas between populated regions," and from the "kinetic (or hindrance) aspect" of features "which make difficult any connections between populated regions." These "natural divides," which may have little effect as "natural barriers," may be of great importance because they provide no zone of intermixture or daily contact. (See the abstract of this article in *Annals of the Assoc. of Amer. Geographers*, Vol. 26, p. 57; the original article was published in a Leipzig University periodical and is, unfortunately, not readily available.) See also Hartshorne's articles, "Geographic and Political Boundaries in Upper Silesia" and "Recent Developments."

¹⁰ Fawcett, *Frontiers*, pp. 34-49.

lehnte"). Hartshorne points out that there are different kinds of natural barriers: "natural defense boundaries," "natural barriers to trade," "natural communication divides," and so forth.

No attempt will be made to use the terms "natural boundaries" and "artificial boundaries" in any strict or technical sense, and it is therefore not necessary to define them precisely. All boundaries are artificial; some are less artificial than others. Some boundaries are much more desirable and workable than others, but the differences that make them so relate to factors that are less obvious than the difference between lines that are observable in the physical geography of the country and lines that are geometrically artificial.

A More Comprehensive Classification

Many boundaries, however, do not fall within the categories of "boundaries marked by nature" and "artificial boundaries," as those terms are properly defined. Although no systematic classification is adapted to the great variety of boundary types found throughout the world, the following classification is suggested as one that is much more comprehensive and useful. The four major groups or classes comprise:

- (a) Physical types, that is, boundaries which follow some feature marked by nature
- (b) Geometrical types, that is, straight lines, arcs of circles, and similar types that disregard the physical geography and topography of the country
- (c) Anthropogeographic types, related to human occupancy of the land
- (d) Complex or compound boundaries, such as compromise lines adjusted to a multiplicity of factors

The principal types of boundaries in these major classes are listed below:

- (a) Physical types of boundaries
 - Mountains
 - Mountain crests
 - Water divides
 - Deserts

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- Lakes, bays, and straits
 - Median lines
 - Principal navigable channel
 - Bank or margin
- Rivers and canals
 - Median lines
 - Thalweg
 - Bank or margin
- Swamps
 - Boundaries through territorial waters to the high sea
 - Contour line (not the bank or margin of a river or lake)
- (b) Geometrical types
 - Straight line (meridians, and other great circles)
 - Parallel of latitude
 - Rhumb line or loxodromic curve
 - Arc of a circle
 - Line parallel to, or equidistant from, a coast or a river
- (c) Anthropogeographic types
 - Tribal boundaries
 - Linguistic boundaries
 - Religious boundaries
 - Economic boundaries
 - Historical boundaries
 - Cultural boundaries
 - Private property lines already existing, cadastral lines
- (d) Complex or compound boundaries, such as compromise lines adapted to a multiplicity of factors

Numerous illustrations might readily be cited for nearly all of these types. Of course they are not in all cases mutually exclusive. For example, a boundary in a desert, a swamp, or a lake may be a straight line or another geometrical type of boundary. Some boundaries almost defy abstract classification. The original boundary of the Panama Canal Zone followed a series of arcs of circles with a radius of five statute miles from the axis of the canal as it was then planned; subsequently it was replaced by a series of straight lines, except that the zone has been extended to include certain drainage basins and is apparently unique where it now follows a contour line 100 feet above sea level (whereas Gatun Lake has a mean level of about 85 feet above the sea) and in another area where it follows the 260-foot contour.

Another sort of boundary that is difficult to classify is a line parallel to, or equidistant from, a coast or a river. The grant to William Penn by Charles II in 1681 was bounded on the east, in part, by the Delaware River; as the boundary extended "Westwards five degrees in longitude to be computed from the said Eastern Bounds," it would have been necessary to map the Delaware River accurately and then, five degrees of longitude to the west, to lay down on the ground the circuitous geometrical counterpart of the course of the Delaware. This would have been a line very expensive to establish, entirely independent of the topography and ridiculous as a boundary. The eastern portion of the southern boundary of Eritrea was originally defined as a line 60 kilometers from the coast, which presumably would constitute a series of arcs of circles of that radius drawn from the more deeply entrant points on the coast; a few maps have so indicated that boundary.

Neutral zones and related types such as buffer states and spheres of influence, although they do not properly belong in the above classification because they are not boundary *lines*, require consideration somewhat analogous to the preceding categories.

The anthropogeographic types of boundaries are usually complex and therefore difficult to define. Unless a political boundary has been precisely fixed, the term "boundary" as applied to any of the anthropogeographic types usually connotes a more or less definite frontier or border line between two regions or communities that differ in cultural characteristics. Tribal "boundaries" are zones but may be very narrow and well recognized by the tribes concerned. A linguistic boundary may be defined as a boundary in a frontier zone between two language areas; there may be a fairly wide bilingual zone, or an area of mixed communities and linguistic "islands," or a surprisingly sharp line comparable to the lines sometimes separating foreign-language settlements in a great city. Similarly, a religious boundary is a boundary in a zone in which two religious faiths or confessions meet. An economic boundary is a boundary between two economic regions, as the term is employed by economic geographers;

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it may also be used to refer to an international boundary on the opposite sides of which society has reached different stages or forms of economic development. Historical boundaries are those that have persisted, or that persisted, for a sufficient number of years to leave perceptible differences between the cultures on opposite sides of the line. Cultural boundaries require a period of time to develop and may coincide, though not necessarily, with linguistic or religious or other specific types of boundaries. A boundary that is defined or demarcated along private property lines, although usually very recent and in this respect different from the other anthropogeographic types enumerated, belongs in the same general classification because it follows a course that is definitely related to the distribution of human beings.

A Genetic Classification of Boundaries

There is need for classifications of boundaries that pass beyond the mere physical factors, such as rivers and mountains, and that take account of the relationships between international boundaries and human society. And of course boundaries have no significance except in relation to human beings. One such classification, which has been proposed by certain American geographers,¹¹ is useful because it represents an attempt to discover the adaptations of boundaries to the factors of human occupation and use of the earth and to the development of different cultures and customs. And it further reveals the complexity of the boundary problems and the necessity of clear thinking on the subject. This terminology is convenient when we inquire, not where the boundary is (physically), but what its characteristics are in relation to human factors. The definition of some of these terms is given by Hartshorne in an article¹² published in 1936:

One of the striking facts in Upper Silesia . . . is the extent to which cultural features conform to the former German-Polish [German-Russian] boundary line. This boundary, which antedates the

¹¹ Chiefly by Richard Hartshorne, with suggestions from Stephen B. Jones and Derwent Whittlesey. Publications by all of them are listed in the bibliography at the end of this volume.

¹² "Terminology of Political Boundaries," pp. 1-2.

development of most of the features of the cultural landscape, most notably in the industrial district, I have classified as an *antecedent*¹³ boundary. Other parts of the former German-Polish boundary are of the same type, so are also the greater part of both the northern and southern boundaries of the United States. *Totally antecedent* (or *pioneer*) boundaries are found where the line was drawn before any settlement took place; such is the Gadsden line between the United States and Mexico, as well as others in the New World (including nearly all the boundaries between the several states of the United States). . . .

Where an antecedent boundary has been abandoned, many of the bounding aspects of the line will remain for some time thereafter—even where the boundary had originally no relation to natural features. I have described these in reference to the condition and extent of roads and railroads, the character of towns, villages, farms, and fields, in the case of the former German-Russian and German-Galician boundaries in Upper Silesia, as seen ten years after the boundary stones had been dug up. For such an abandoned line still visible in the cultural landscape, Whittlesey has suggested the term "relic."

Most international boundaries have been marked off since the development of the regions, and are therefore *subsequent*.¹⁴

In many cases these conform to major or minor divisions in the cultural landscape, but where they have been drawn with notable lack of conformity to those features we may call them *superimposed*. The present boundary in Upper Silesia, whether or not justified by other considerations, is a particularly clear example of this type, as is also the line dividing the city of Teschen between Czechoslovakia and Poland, regardless of the fact that it follows a natural feature, the Olsa River. But equally superimposed is the line, dating from 1742, between Prussian Silesia (now Germany) and Austrian Silesia

¹³ Amplifying this definition, Hartshorne has called attention to the fact that along this "antecedent boundary" in Upper Silesia, the establishment of which antedated modern industrialization by several centuries, there grew a great development of mining and manufacturing on either side of the line and that the development on each side had an economic, transport, social, and cultural boundary which almost exactly followed, or conformed to, the old German-Russian political boundary—just because it was there. In other words, an antecedent political boundary does not merely endure in the face of new developments, but tends to influence developments, so that they conform to it.

¹⁴ The essential idea of the "subsequent boundary" is that it is established subsequent to the development of the cultural pattern which now prevails. The German-Polish boundary in Upper Silesia, which was laid down in the period 1919-22, *subsequent* to the great German industrial development prior to 1914, was in this sense a subsequent boundary.

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(now Czechoslovakia); farms and villages appear today as clearly sliced in two as they must have two centuries ago.

It should be pointed out that all of these terms are relative rather than absolute in meaning, and require therefore some following phrase, whether stated or implied. Thus, a boundary may be antecedent in one sense, but subsequent in another. The Franco-Belgian boundary was presumably superimposed, on the rural landscape, with little or no conformity to its features, but it is antecedent to the present industrial landscape, which conforms to it in minor, though not in major, degree. And of course, a boundary may be superimposed on the cultural landscapes in most of its aspects, but conform approximately to a language divide, as would be the case along parts of the present German-Polish frontier. Furthermore there is a tendency, over long periods, for such features as language, culture, and nationality, as well as visible landscape features to conform to a political boundary once established.

Boundaries that have been established upon divides between populated areas, either in consequence of the absence of population or because of the barrier effect that keeps populations apart, are called *consequent* boundaries, according to the usage of the same geographers. In general, they comprise boundaries that are drawn through sparsely populated or uninhabited regions or zones, the boundaries being so placed because those zones exist.

Looking at the map of the world, it will be noted that *antecedent* boundaries include most of the straight-line boundaries, which are scarcely found outside of the New World and Africa, where they are antecedent to settlement; that is, the boundaries were largely defined prior to settlement by the peoples who established them. They reflect the geographical ignorance of the time. They work as well as they do largely because settlement has followed and has adapted itself to established jurisdictions. In the Old World, antecedent boundaries are those that antedate the development of the present cultural landscape and that have persisted while houses, fields, roads, and other marks of human occupation grew up differently on opposite sides of the boundary.

Subsequent boundaries are found chiefly in those parts of Europe in which there have been shifts of the frontiers, such that the more recent boundaries cut across previously developed

cultural areas or zones. Sometimes they follow boundaries of minor political divisions within the partitioned territory. Likewise, *superimposed* boundaries, which cut across areas in which there is cultural unity, are found chiefly in central and eastern Europe and the Near East, where they not infrequently disregard even the limits of minor civil divisions and towns, sometimes cutting in two many of the holdings of private property, both agricultural and urban.

Boundaries that are *consequent* upon sparsity of population and obstacles to communication and traffic are found in all continents. They include many of the boundaries in South and Central America, especially the mountain boundaries; some of the European boundaries, such as the Pyrenees; and many of the mountain and desert boundaries in Asia and Africa. River boundaries are but rarely consequent boundaries.

TERMINOLOGY RELATING TO BOUNDARY DISPUTES AND SETTLEMENTS

Classification of terminology relating to boundary disputes is also desirable. Sometimes the placing of a boundary involves disagreement only over minor details and over the character of the line as a line. But much more frequently a boundary dispute is actually a territorial question because there is territory between any two hypothetical boundary lines. Again, the placing of a boundary involves granting or denying a demand for a river port or a sea port. The many objectives that are sought by nations in the name of boundary claims should be segregated, in so far as feasible, from the specific aspects of boundaries themselves. It is not that the problems can be disposed of singly, because they are inseparable, but that the problems may be more intelligently analyzed and their solution may be thereby advanced by being better understood.

Attention should be called to one term that is often misused in connection with the settlement of disputes regarding boundaries that have not previously been definitely established. A given territory is involved in the dispute, and each country fre-

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quently maintains that it is unquestionably entitled to the whole of that territory to the complete exclusion of the other. In the settlement of the controversy, however, compromise may be necessary, each country accepting only a part of what it claims. Not infrequently, a country will assert that it can not "cede" any part of its territory. It is a repetition of the "Fifty-four-forty-or-fight" pattern of thinking. The term "cede" (or its equivalent in any other language) should obviously not be employed in such instances. It is appropriate and accurate to say that each country "concedes" part of the territory to which it, in common with the other country, has asserted claim. A contribution to clear thinking and to the peaceful solution of the problem concerned will thus be made.

When a boundary controversy has been settled and the two countries proceed to establish their common frontier definitively, there are at least two distinct stages, to which reference has already been made, which have different names not always clearly defined in the literature. These terms are "delimitation" and "demarcation." Colonel Sir Henry McMahon relates how he came to fix upon the terms and how they took root in recent usage. Finding that precise terms were needed but lacking, he selected these two words, "delimitation" and "demarcation," but discovered that the dictionary treated them as synonymous. Consequently he gave them different meanings, which have been adopted. In his own words:

"Delimitation" I have taken to comprise the determination of a boundary line by treaty or otherwise, and its definition in written, verbal terms; "Demarcation" to comprise the actual laying down of a boundary line on the ground, and its definition by boundary pillars or other similar physical means.¹⁵

¹⁵ "International Boundaries," p. 4. In a footnote he adds, "I first made use of these definitions in a lecture given to a military institute at Woolwich about 1897, and Lord Curzon paid me the compliment of adopting them in his Romanes Lectures at Oxford in 1907."

Chapter III

BOUNDARY-MAKING BETWEEN THE UNITED STATES AND CANADA

TRANSCONTINENTAL boundaries between a single pair of countries are found only in North and Central America. Three of them are frontiers of the United States and its territory Alaska—two with Canada and one with Mexico. The history of the making of the longest of these, extending nearly four thousand miles from Atlantic to Pacific, affords an interesting introduction to the study of the problems of defining and establishing boundaries in the New World.

Between 1782 and 1925 the United States-Canada boundary was a subject of negotiation in at least seventeen treaties, conventions, and protocols which have gone into force, and of others which failed to be ratified or completed. There have been two arbitrations. A number of international commissions have been appointed to settle details in dispute relating to the interpretation of treaty provisions. The original documents, including treaties, arbitration materials, and reports of boundary commissions relating to this single boundary now fill more than forty-five linear feet of shelves and nearly sixty large map drawers at the National Archives in Washington, D.C., the transfer of the archives of the Department of State having been made in 1938. In addition to that formidable mass of source material of history there have been other papers that have been lost, and many others are in the active files of the present International Boundary Commission (United States-Canada and Alaska-Canada).

The definitive edition of the treaties of the United States,¹

¹ *Treaties and Other International Acts of the United States of America.*

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which is being published by the Department of State under the editorship of Dr. Hunter Miller, contains a wealth of information relating to the United States-Canada boundary in extensive scholarly notes which make full use of the source materials in the archives. The six reports published by two international boundary commissions,² which now cover the entire boundary, comprise nearly 2,400 printed pages and are accompanied by atlases. The latest report was published in 1937. In relation to the former boundary controversies, including the two arbitrations, much has been published.

It is not a dearth of authentic information regarding the boundary between Canada and the United States but the lack of a convenient guide to the most authoritative and pertinent materials that handicaps one who is interested either in a particular phase of boundary history or in a specific portion of the frontier. The chronological-geographical table (Appendix B), accompanied by extensive notes, is intended to provide a practical guide to the literature.

By way of background, the United States-Canada boundary may be considered in relation to the New World in which it lies. In the Western Hemisphere, many thousands of miles of international frontiers are oblivious of the trends of mountains, divides between drainage basins, the courses of rivers, and the distribution of peoples. The majority of the many boundary controversies have had their roots in the colonial period when European monarchs, geographically in blissful ignorance, drew ambitious lines upon the grossly inaccurate maps of their day.³ Nevertheless, more extensive boundaries have been peacefully established between sovereign states and are maintained without show of force and without fear of aggression in the New World than in any other portion of the globe. The simplicity of the

² The International Boundary Commission, appointed under the treaties of April 11, 1908, and Feb. 24, 1925, and the International Waterways Commission, appointed under the special provisions of Article IV of the treaty of April 11, 1908; the latter commission is no longer in existence and its duties have been transferred to the commission first named.

historical pattern and the relative absence of population pressure in the newly occupied continents largely account for this fortunate situation. The frontier with our neighbor to the north is conspicuous in these regards, even among the forty-one international boundaries of the New World. (The Alaska-Canada boundary is here reckoned as a separate boundary; the Canada-Labrador boundary is also counted as international, since Canada is a separate nation within the British Commonwealth of Nations.)

The types of country through which the boundary passes will be described geographically before the historical development of the boundary is briefly recounted.

DESCRIPTION OF THE COURSE OF THE BOUNDARY

If the problems of boundary-making are to be understood, to look at a simple political map and disregard the geographic factors which accounted for some of the problems encountered by treaty negotiators, arbitrators, and boundary commissioners will not suffice. A portion of a physiographic diagram of the United States by A. K. Lobeck is reproduced as Figure 3 (page 39) and serves as a physical map. On it are named the major physical regions or "physiographic provinces" of North America and their principal subdivisions, according to Fenneman's widely used classification.³

At the Atlantic end, the boundary crosses nearly all types of topography of the New England "physiographic province." The first twenty-five miles of the Maine-New Brunswick boundary are in Grand Manan Channel and Passamaquoddy Bay, which are parts of the Bay of Fundy and share its phenomenal tides. At West Quoddy Head is the most easterly land in the United States. The boundary continues northward through the Seaboard Lowland section of New England by way of the St. Croix River to its source, whence the meridian of that source cuts across the dis-

³ Fenneman, *Physiography of Eastern U.S.* and *Physiography of Western U.S.*

sected and glaciated peneplains of the New England upland and passes historically important Mars Hill on its way to the St. John River and its affluent, the St. Francis. On the latter river the state of Maine meets the Canadian province of Quebec. Thence the boundary strikes southwest and more southerly, in two straight lines, to find the historically elusive "highlands" in the subdued crystalline rock masses which are structurally a continuation of the White Mountains.

Near Halls Stream—one of the sources of the Connecticut—at the narrow northern tip of New Hampshire, the boundary again finds the upland section of New England and continues westward along the border of Vermont and New York on the 45th parallel; here it traverses in succession the Green Mountain section and the St. Lawrence Valley physiographic province, first in the rolling glaciated lowland around Lake Champlain, then in the young marine plain, as it approaches the St. Lawrence River.

Here the state of New York meets the Canadian province of Ontario. Ascending the St. Lawrence River, the boundary enters the eastern lake section of the Central Lowland physiographic province near Ogdensburg. Then it threads its way among the famous Thousand Islands before passing into and through Lake Ontario. The boundary next follows the winding Niagara, leaps the falls over one of the strong limestone cuestas, and enters Lake Erie near Buffalo. Passing westward through Lake Erie, whose waters are embraced within the states of New York, Pennsylvania, Ohio, and Michigan and the province of Ontario, the line ascends the Detroit River, crossed daily by thousands of international commuters. After traversing Lake St. Clair and Lake Huron, it goes through the locks at Sault Ste Marie into Lake Superior and on into the Superior Upland physiographic province.

Crossing Lake Superior to the north of Isle Royale, the Michigan-Ontario boundary coincides with the international boundary all the way to the mouth of the Pigeon River at the

apex of Minnesota's share of Lake Superior. Leaving the lake and ascending the Pigeon River, the boundary crosses a short portage, where it leaves the drainage basin of the Atlantic Ocean and passes into that of Hudson Bay; it then continues by a tortuous water line through Rainy Lake and again into the Central Lowland physiographic province to the Lake of the Woods. At the northwestern point of the Lake of the Woods it takes leave of the Canadian province of Ontario, the 1,715-mile frontier of which is wholly a water boundary save for three short portages to the west of the Pigeon River.

Through a stretch of ten degrees of longitude, eight degrees of it on the 49th parallel, the boundary line passes through the western lake section of the Central Lowland along the borders of Minnesota and North Dakota with Manitoba and Saskatchewan, in the wheat belt. Near the 100th meridian the boundary crosses the Turtle Mountains, an outlier of the Missouri plateau fifty miles away. The forests of these mountains, rising a thousand feet above the plain, are conspicuous in a prairie country. Then through more than ten degrees of longitude the boundary makes its way directly across the Missouri plateau portion of the Great Plains as it follows the frontiers of North Dakota and Montana with Saskatchewan and Alberta. For more than eight hundred miles along the 49th parallel the boundary has cut indifferently across rivers flowing toward Hudson Bay and the Gulf of Mexico—the Red River, the Souris, the Milk, the St. Mary. The fair apportionment of the waters of these rivers has presented several problems to the International Joint Commission.

About twenty or twenty-five miles east of the summit of the Rocky Mountains the frontier traverses the deeply dissected mountain uplands of the northern Rocky Mountains province. At an elevation of about 7,430 feet the line reaches the "summit," as it is known in the treaties; actually, it is a point on the continental divide which, at the 49th parallel, is on a saddle. An elevation of 9,280 feet is reached about eight miles farther west on a shoulder of Boundary Mountain. In crossing the Rockies

the boundary divides Glacier National Park on the south from Waterton Lakes Park on the north. In the Rocky Mountains we find the long, continuous topographic depressions called "trenches." One of these, the Rocky Mountain Trench, is perhaps the greatest feature of its kind in the world; extending 800 miles in a northwest-southeast direction this trough or trench is drained by eight different rivers. The boundary continues due west along the borders of Idaho and Washington with British Columbia as it crosses the northern Cascade Mountains and the Pacific Border province to the terminus of the 49th parallel boundary at Point Roberts. Most of the way from the Rockies west to the coast the boundary is bordered on the American side by national forests and parks.

Ending, as it began, a water boundary, it passes through Georgia Strait, Haro Strait, and the Strait of Juan de Fuca to the Pacific Ocean. From sea to sea the boundary is 3,987 miles long, 2,198 miles or fifty-five percent being water boundary and 1,789 miles land.

In considering how such a boundary line came into being we shall divide it into twelve sections that bear convenient relation to the numerous treaty negotiations and boundary commission operations: (A) Passamaquoddy Bay; (B) St. Croix River; (C) "North Line" (meridian of the source of the St. Croix); (D) St. John and St. Francis rivers and the "highlands"; (E) Halls Stream; (F) 45th parallel (Valentine-Collins line); (G) St. Lawrence River, Lakes Ontario, Erie, and Huron; (H) Lake Superior; (J) Pigeon River to northwestern point of Lake of the Woods; (K) 49th parallel east of the summit of the Rocky Mountains; (L) 49th parallel west of the summit of the Rocky Mountains; and (M) Gulf of Georgia to the Pacific Ocean. These are shown on Figure 4 and on the chronological-geographical table (Appendix B).

The lengths of the several sections of the boundary and of the land and water portions of the boundary are given in Table 2.

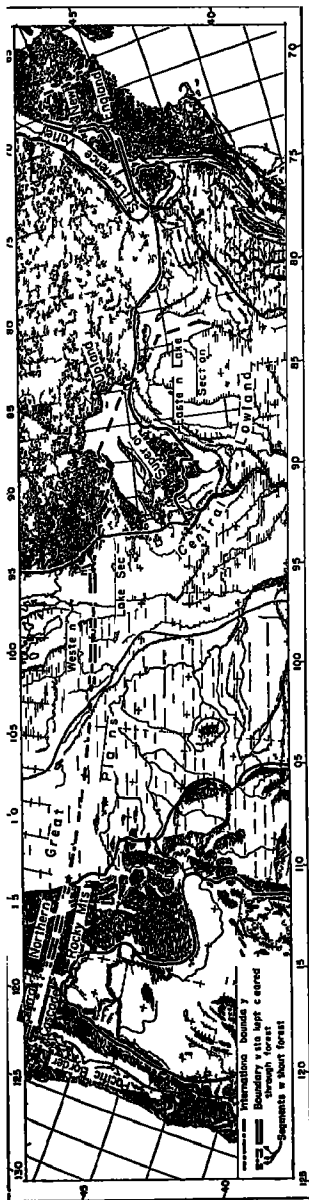


FIG 3 PHYSICAL DIVISIONS TRAVERSED BY THE
UNITED STATES-CANADA BOUNDARY

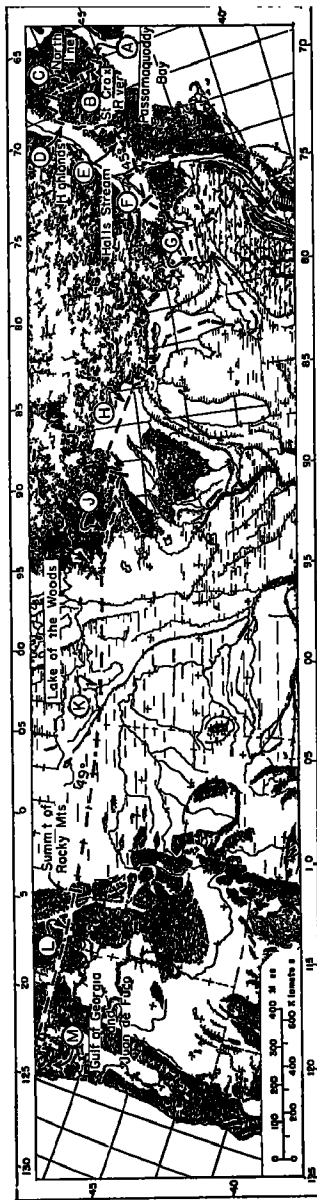


FIG 4 HISTORICAL DIVISIONS OF THE UNITED STATES-
CANADA BOUNDARY
(As base map for Figs 3 and 4, A K Lobeck's physiographic diagram of the United States is
used by permission)

TABLE 2
UNITED STATES-CANADA BOUNDARY

SECTION OF BOUNDARY	LENGTH OF BOUNDARY (IN STATUTE MILES)		
	<i>Land Boundary</i>	<i>Water Boundary</i>	<i>Total</i>
(A) Passamaquoddy Bay	0	25.2	25.2
(B) St. Croix River	0	129.4	129.4
(C) "North Line"	77.6	0	77.6
(D) St. John River to the "highlands":			
St. John River	0	72.0	72.0
St. Francis River	0	42.6	42.6
Southwest and South lines	83.7	0	83.7
SW branch, St. John River	0	38.4	38.4
Highlands boundary	174.6	0	174.6
(E) Halls Stream	0	26.6	26.6
(F) 45th parallel	154.9	0	154.9
(G) St. Lawrence, and Lakes Ontario, Erie, and Huron	0	955.9	955.9
(H) Lake Superior	0	333.0	333.0
(J) Pigeon River to NW point of Lake of the Woods	0.8	425.0	425.8
(K) 49th parallel E of the Rocky Mountains to NW point of Lake of the Woods	886.7	0	886.7
(L) 49th parallel W of the Rocky Mountains	410.2	0	410.2
(M) Gulf of Georgia, Haro Strait, and Strait of Juan de Fuca	0	150.1	150.1
TOTAL	1,788.5	2,198.2	3,986.7

Some of the more interesting phases of the problems of boundary-making relating to these sections of the boundary are discussed in the following pages.

DEFINITION OF THE BOUNDARY IN 1782-83

Adopting the provisions of the preliminary articles of peace of 1782, the definitive treaty of peace with Great Britain, signed

at Paris, September 3, 1783, attempted to fix the boundaries of the United States in these terms:

And that all Disputes which might arise in future on the Subject of the Boundaries of the said United States, may be prevented, it is hereby agreed and declared, that the following are and shall be their Boundaries, Viz. From the North West Angle of Nova Scotia, viz. That Angle which is formed by a Line drawn due North from the Source of Saint Croix River to the Highlands along the said Highlands which divide those Rivers that empty themselves into the River St. Lawrence, from those which fall into the Atlantic Ocean, to the Northwestern-most Head of Connecticut River: Thence down along the middle of that River to the forty fifth Degree of North Latitude; From thence by a Line due West on said Latitude until it strikes the River Iroquois or Cataraquy; Thence along the middle of said River into Lake Ontario; through the Middle of said Lake until it strikes the Communication by Water between that Lake & Lake Erie; Thence along the middle of said Communication into Lake Erie; through the middle of said Lake, until it arrives at the Water Communication between that Lake & Lake Huron; Thence along the middle of said Water-Communication into the Lake Huron, thence through the middle of said Lake to the Water Communication between that Lake and Lake Superior, thence through Lake Superior Northward of the Isles Royal & Phelipeaux to the Long Lake; Thence through the Middle of said Long-Lake, and the Water Communication between it & the Lake of the Woods, to the said Lake of the Woods; Thence through the said Lake to the most Northwestern Point thereof, and from thence on a due West Course to the River Mississippi, Thence by a Line to be drawn along the Middle of the said River Mississippi until it shall intersect the Northernmost Part of the thirty first Degree of North Latitude. South, by a Line to be drawn due East from the Determination of the Line last mentioned, in the Latitude of thirty one Degrees North of the Equator to the middle of the River Apalachicola or Catahouche. Thence along the middle thereof to its Junction with the Flint River; Thence strait to the Head of St. Mary's River, and thence down along the middle of St. Mary's River to the Atlantic Ocean. East, by a Line to be drawn along the Middle of the River St. Croix, from its Mouth in the Bay of Fundy to its Source; and from its Source directly North to the aforesaid Highlands, which divide the Rivers that fall into the Atlantic Ocean, from those which fall into the River St. Lawrence; comprehending all Islands within twenty Leagues of any Part of the Shores of the United States, &

lying between Lines to be drawn due East from the Points where the aforesaid Boundaries between Nova Scotia on the one Part and East Florida on the other, shall respectively touch the Bay of Fundy and the Atlantic Ocean, excepting such Islands as now are or heretofore have been within the Limits of the said Province of Nova Scotia.⁴

Of the boundary as it is now established, the treaty of 1783 attempted to define that portion from the Atlantic Ocean to the northwesternmost point of the Lake of the Woods—a line measuring 2,540 miles as the boundary is now fixed. The western boundary in the Mississippi River and the southern boundary with Florida disappeared within four decades by virtue of territorial acquisitions from France and Spain.

Although the treaty negotiators used the best map of their time, Mitchell's map of North America,⁵ and expressed their hope "that all Disputes which might arise in future on the Subject of the Boundaries of the said United States, may be prevented" a rather surprising number of disputes arose within a few years. Some of the doubts as to the meaning of the treaty were not resolved until compromises were made within the present century. At least nine distinct questions arose:

1. What islands were formerly part of Nova Scotia?
2. Which river was the River St. Croix of the Mitchell map?
3. What was the location (even on a map) of the northwest angle of Nova Scotia?
4. What were the "Highlands" between the northwest angle of Nova Scotia and the northwesternmost head of the Connecticut River?
5. Which stream is the northwesternmost head of the Connecticut River?
6. Should the boundary on the 45th parallel be the line inaccurately established in 1771-74 as the New York-Quebec provincial boundary, or a more correctly surveyed line?

⁴ Miller, *Treaties*, Vol. 2, pp. 152-53.

⁵ With reference to Mitchell's map of North America, "the most important and the most famous map in American history," see the notes based in large part on an unpublished book by Colonel Lawrence Martin, in Miller, *Treaties*, Vol. 3, pp. 328-51, especially pp. 328-30, 348-50; a facsimile of the Steuben-Webster copy of the map is at the back of the same volume. See also *ibid.*, Vol. 4, pp. 403-13.

7. What should be the line among the islands in the "Water communication" between Lakes Huron and Superior and through Lake Superior?
8. Which was the "Long Lake," and the water communication between it and the Lake of the Woods?
9. What was the northwesternmost point of the Lake of the Woods?

From the Atlantic Ocean to the Lake of the Woods, there was not a mile of boundary that was not the subject of further negotiation before it could be definitely established. The Honorable John W. Davis, remarking on the boundary disputes that arose from the treaty of 1783, made this pertinent observation: "If the history of the boundary teaches no other lesson, it should at least warn treaty makers to be forever suspicious of paper boundaries based upon insufficient surveys."⁶

HISTORICAL SUMMARY OF THE BOUNDARY DEVELOPMENT

Appendix B lists the treaties, conventions, protocols, arbitral awards, and reports of special commissions and the section or sections of the boundary upon which each has a bearing. With the extensive notes that follow, this table affords at least a partial answer to questions, both geographical and historical, as to how and when any given point or portion of the boundary was established, as well as to what part of the boundary each treaty, arbitral award, or commission report is related.

The principal treaties, arbitrations, and decisions of commissions since 1783 are, briefly, these: Under the Jay Treaty in 1794 commissioners were appointed to resolve the "doubts [that] have arisen what River was truly intended under the name of the River St. Croix in the said Treaty of Peace," the commission making its report or declaration in 1798. The Treaty of Ghent in 1814 set up four commissions to dispose of doubts that existed concerning all of the boundary from the islands in Passamaquoddy Bay to the northwesternmost point of the Lake of the

⁶ Davis, "The Unguarded Boundary," pp. 589-90.

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Woods—with the exception, of course, of the St. Croix River, already agreed upon. Two of those commissions subsequently reached conclusions relating to the sovereignty of islands in Passamaquoddy Bay and to the middle-line course of the boundary in the St. Lawrence and in Lakes Ontario, Erie, and Huron; but the other two commissions left legacies of doubt. The convention of 1818 carried the boundary westward from the Lake of the Woods by the 49th parallel to the summit of the “Stony” or Rocky Mountains. The convention of 1827 led to the arbitration of the northeastern boundary question by the King of the Netherlands; but his decision in 1831 failed of acceptance by the United States, and Great Britain withdrew its offer to accept it. The Webster-Ashburton Treaty in 1842 settled the northeastern boundary question and the course of the boundary through Lake Superior and thence to the Lake of the Woods, thus clearing up, save for certain minor details, the last of the doubts that had sprung from the description of the boundary in the 1783 treaty. The so-called Oregon treaty of 1846 extended the 49th parallel boundary to the Gulf of Georgia and attempted to fix the water boundary thence to the Pacific. By the treaty of Washington of 1871 the determination of the water boundary from the 49th parallel to the Pacific was referred to arbitration by the German Emperor, whose award was rendered in 1872. A convention in 1892 made the first attempt to establish the course of the boundary in the channels of Passamaquoddy Bay. The treaty of 1908 provided for the more complete definition and demarcation of the entire boundary from Atlantic to Pacific. A treaty in 1910 carried the water boundary by a definite course in Passamaquoddy Bay out to the middle of Grand Manan Channel. The treaty of 1925 defined the boundary more accurately in three particulars and provided for the maintenance of the demarcated boundary.

To review the history of the establishment of each section of the boundary separately is not pertinent to our purpose. The notes to Appendix B comprise a sort of historical summary. But

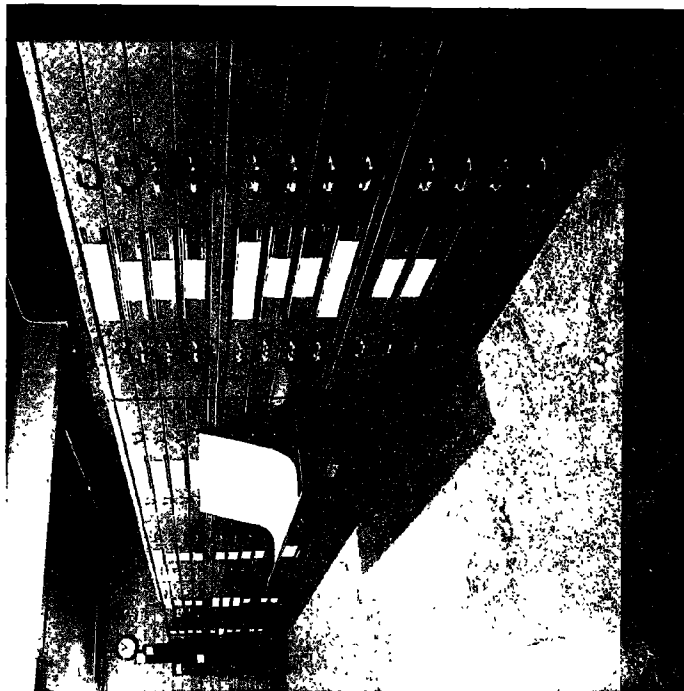
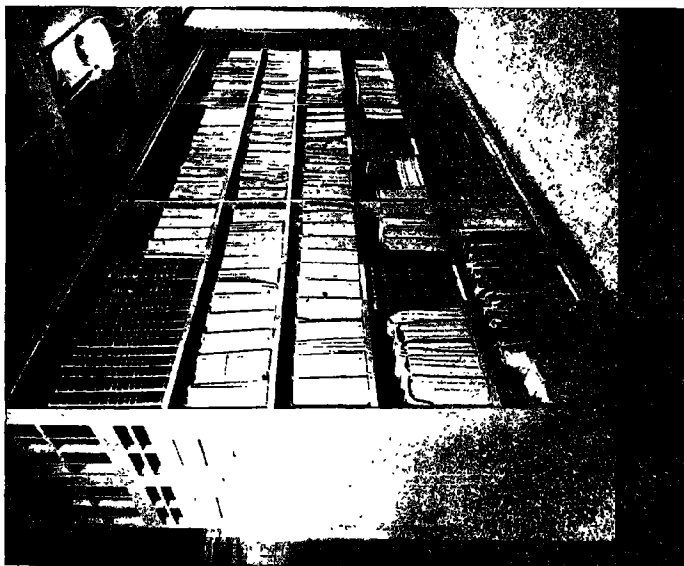


PLATE I. MATERIALS ON THE CANADA-UNITED STATES
BOUNDARY IN THE UNITED STATES NATIONAL ARCHIVES
Left: Textual materials: commission reports, arbitration proceedings, etc. Right: Map materials.
Photographs from The National Archives.

to illustrate the problems of boundary-making in a new and inadequately surveyed continent, consideration of certain of the doubts and difficulties that arose from the earlier treaties and of a few rather unusual developments of the boundary will suffice.

Northeastern Boundary Questions

The boundary from the Atlantic Ocean to the St. Lawrence is commonly spoken of as the "northeastern boundary." The St. Croix question had been settled in 1798, but commissions created under Articles 4 and 5 of the Treaty of Ghent had attempted to establish the rest of the northeastern boundary. The commission under Article 4 determined the sovereignty of most of the islands in Passamaquoddy Bay without attempting to fix the course of the boundary in the channels of the bay. The commission under Article 5 ran an "exploring line" on the meridian of the source of the St. Croix past Mars Hill and across the St. John River, terminating the meridian survey at the Metis River, which flows into the St. Lawrence. Being unable to agree upon the rest of the northeastern boundary, from the "northwest angle of Nova Scotia," along the "highlands" and the 45th parallel, they filed separate reports. The bulkiness of their reports is intimated in the treaty of 1827, which provides for arbitration of the pending controversies:

The Reports and Documents thereunto annexed of the Commissioners appointed to carry into execution the 5th Article of the Treaty of Ghent, being so voluminous and complicated, as to render it improbable that any Sovereign or State should be willing or able to undertake the office of investigating and arbitrating upon them, it is hereby agreed to substitute for those Reports new and separate Statements of the respective cases severally drawn up by each of The Contracting Parties, in such form and terms as each may think fit.⁷

The absence of any topographic features corresponding to the "highlands" of the 1783 treaty is of special interest. The meridian

⁷ Miller, *Treaties*, Vol. 3, p. 320.

of the source of St. Croix River crosses no simple line of highlands. Westward from the "due north line," the boundary as established by the compromise of the Webster-Ashburton Treaty follows, instead, the St. John and St. Francis rivers, then two straight lines and the upper course of the Southwest Branch of the St. John, before reaching what is now referred to as the "highland" section of the boundary, which extends for about 175 miles to the waters of Halls Stream.

The territory to which the United States acquired clear title by the Webster-Ashburton Treaty was about 900 square miles less than would have been obtained if the decision of the King of the Netherlands had been accepted. Both Maine and Massachusetts gave formal assent to the settlement. Although Maine did not and could not embrace any territory beyond the limits within which the United States could establish clear title, that state and the parent state of Massachusetts maintained their claim as if it were completely valid and therefore regarded as a cession of part of Maine the concession to Great Britain in the compromise. Article 5 of the Webster-Ashburton Treaty is unusual in that it records the arrangement by the United States government to pay to the states of Maine and Massachusetts the sum of \$300,000, "in equal moieties, on account of their assent to the line of boundary described in this Treaty . . ."

The boundary in Passamaquoddy Bay was the last portion of the northeastern boundary to be completely defined. The treaty of 1783 made no attempt to fix a precise boundary in the water. Under Article 1 of the treaty of 1908 the boundary was established from the mouth of the St. Croix to a point near Treat Island. The treaty of 1910 carried the line to the middle of Grand Manan Channel, which was apparently assumed to be at the high sea. Under Article 3 of the treaty of 1925 the boundary was extended to the high sea to a point three nautical miles from the American and Canadian shores.⁸

⁸ See also chapter x, relating to water boundaries. Figure 24 (p. 187) shows the points here referred to: the 1908 treaty fixed the boundary in Passamaquoddy Bay from T.P. (turning point) 1 to T.P. 7; the 1910 treaty extended it to T.P. 14; the 1925 treaty carried the boundary to the high sea at T.P. 15.

Horseshoe Reef

It would be difficult to find a more singular boundary transaction than the cession of Horseshoe Reef to the United States by the protocol of December 9, 1850.⁹ Near the port of Buffalo were ledges of sunken rock which endangered navigation in the eastern end of Lake Erie. The United States desired either to erect a lighthouse upon one of these reefs or to have Canada do so. Rather than pay the cost of establishing and maintaining a lighthouse which would benefit chiefly the port of Buffalo, Great Britain ceded to the United States an exclave of a fraction of an acre of land under water and entirely surrounded by Canadian waters, approximately 1,150 feet west of the middle-line boundary shown on Map 16 accompanying the 1822 report of the commissioners under Article 6 of the Treaty of Ghent—as nearly as we have been able to trace that boundary upon the more accurate recent charts. There the United States erected a lighthouse which was maintained until 1919; modern powerful electric lights on shore have made its continuance unnecessary.

The boundary in the Great Lakes, as redefined by the commission under Article 4 of the treaty of 1908, is shifted to include Horseshoe Reef within the waters of the United States, turning point No. 153 being fixed at a point 100 feet due west of the light (now abandoned).

Northwesternmost Point of the Lake of the Woods

On Mitchell's map, the only map that the negotiators had to guide them in 1782, the Lake of the Woods was shown as an elliptical lake of very regular form. By the treaty of 1783 the boundary extended ". . . through the said Lake [of the Woods] to the most Northwestern Point thereof, and from thence on a due West Course to the River Mississippi. . . ." By the treaty of 1818 the boundary was extended ". . . from the most Northwestern Point of the Lake of the Woods . . . [by] a Line drawn . . . due North or South as the Case may be, until the said Line

⁹ See Miller, *Treaties*, Vol. 5, pp. 905-28, for text of the protocol, with notes and a map.

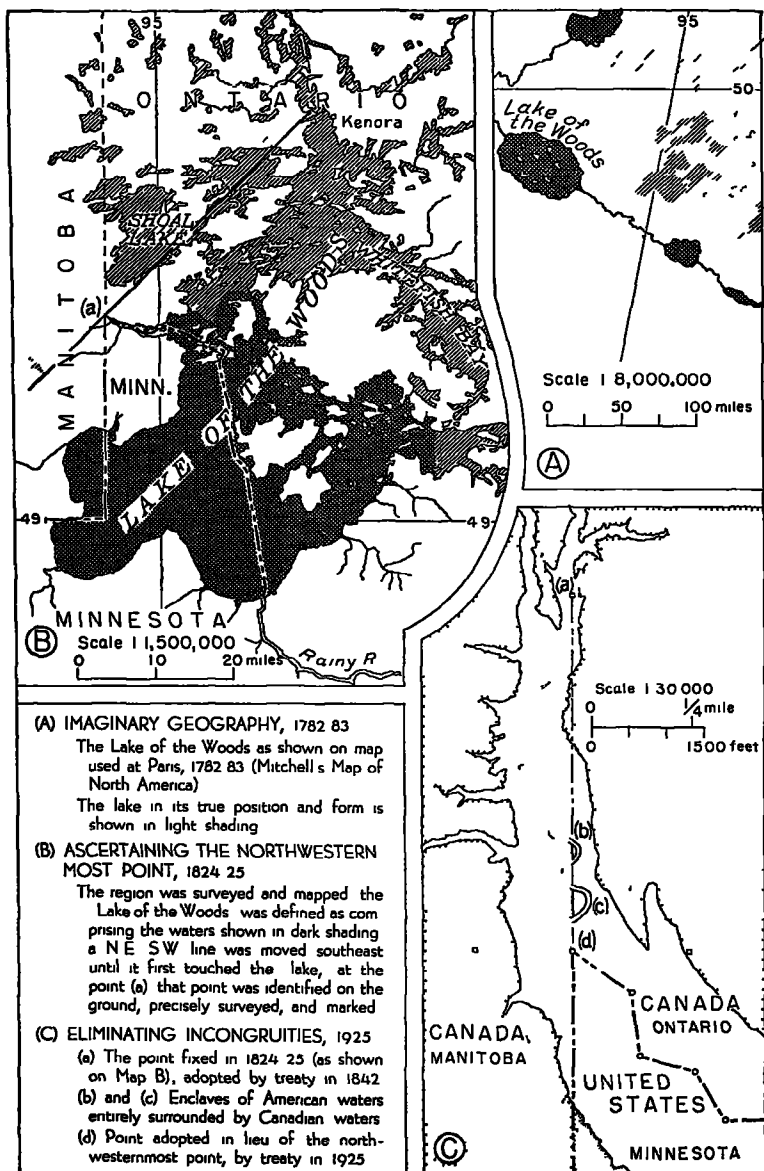


FIG. 5. THE NORTHWESTERNMOST POINT OF THE LAKE OF THE WOODS ESTABLISHING ONE POINT ON THE BOUNDARY, 1782-1925

shall intersect the . . . [49th] Parallel of North Latitude, and . . . due West along and with the said Parallel . . . to the Stony Mountains."

In 1824 David Thompson and in 1825 Dr. J. L. Tiarks, British astronomers and surveyors, were engaged with the commission under Article 7 of the Treaty of Ghent to determine the northwestern point of the Lake of the Woods. Figure 5 illustrates the interesting process of fixing that point upon a body of water as irregular as the actual Lake of the Woods. The lakes on the map were known by four names, Lac Plat, Clear Water, White Fish, and Lake of the Sand Hills. By a process of reasoning which is not recorded they came to regard three of these as constituting the Lake of the Woods and rejected the northwestern Lac Plat. Then, in order to determine the most northwestern point of what they thus defined as the Lake of the Woods, Dr. Tiarks imagined a line drawn exactly northeast-southwest, being moved southeastwardly on an axis at right angles thereto, until it first touched a point of the lake. That point was marked by reference monuments and was recovered in later surveys.¹⁰

By surveys made in 1912 it was definitely established that the line due south from the northwestern point of the lake was intersected at five points by the winding course of the boundary in the channel of Northwest Angle Inlet; thus were anomalously left two small areas of waters totaling two and a half acres belonging to the United States yet entirely surrounded by Canadian waters. Furthermore, the "northwesternmost point" was quite isolated and actually not *on* any boundary whatever. This arrangement was certainly neither intended nor desired by either government. If the boundary had run due west (as prescribed in 1783) instead of due south there would have been no difficulty. By the treaty of 1925, therefore, the southernmost of these five intersections was adopted "in lieu of the said Northwesternmost Point." The northernmost point on the United States-Canada

¹⁰ See the note on "The Most Northwestern Point of the Lake of the Woods" in Miller, *Treaties*, Vol. 4, pp. 428-32. See also International Boundary Com., "Report . . . the Gulf of Georgia to the Northwesternmost Point of Lake of the Woods" (1937), pp. 137-42.

boundary, a point in the waters of the Lake of the Woods, is fixed by the treaty of 1925 at a point 4,785 feet farther south than the former "northwesternmost point" in the same lake.

The Great Lakes and Other Water Boundaries

By the treaty of 1783 (Article 2), the boundary of the United States was defined as following the "middle" of twelve of the rivers, lakes, and water communications between lakes.¹¹ The location of the boundary in Lake Superior, the Huron-Superior "water communication," and the Lake of the Woods was not specified.

The rather vague term "middle" was perhaps naturally chosen in referring to waters that were little known and poorly mapped, and the term probably commended itself to the treaty-makers as being even-handed and fair.¹²

Figure 6 (A) shows the boundary in the Great Lakes as it was added by hand on the Steuben-Webster copy of the Mitchell map of North America. The shading shows the land areas as they are now accurately mapped. Striking inaccuracies in the delineation of all five of the Great Lakes on the Mitchell map reflect the imperfect geographical knowledge of the eighteenth century.

Doubts soon arose concerning the meaning of the treaty of 1783 in relation to the boundary in the St. Lawrence River,¹³ in the Great Lakes, and thence to the northwesternmost point of the Lake of the Woods. Such doubts were expressed in the Treaty of Ghent of 1814,¹⁴ in Articles 6 and 7 of which provision was made for the appointment of two commissioners "finally to decide these doubts" as to "what was the middle of the said river,

¹¹ In the treaty order: the Connecticut River, St. Lawrence River, Lake Ontario, Ontario-Erie water communication, Lake Erie, Erie-Huron water communication, Lake Huron, "Long Lake" and its "water communication" with the Lake of the Woods [Pigeon River, etc., here reckoned as one entity], Mississippi River, Apalachicola [Chattahoochee] River, St. Mary's River, and St. Croix River.

¹² Regarding the general problems involved in laying down a middle-line boundary on any map or chart, see chap. x, pp. 179-83, where Lake Erie is cited as an example; see therein Figures 21 and 22.

¹³ Called "River Iroquois or Cataraquy" in the treaty of 1783, Article 2.

¹⁴ Miller, *Treaties*, Vol. 2, pp. 574-82.

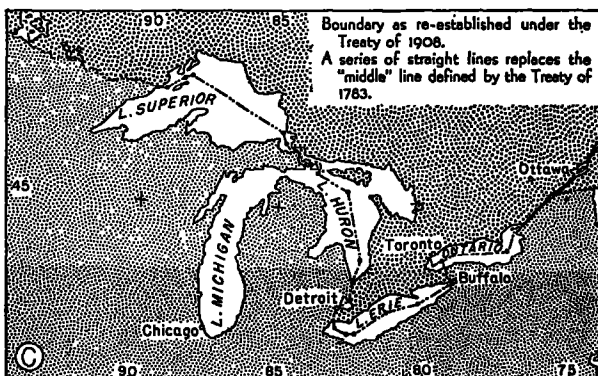
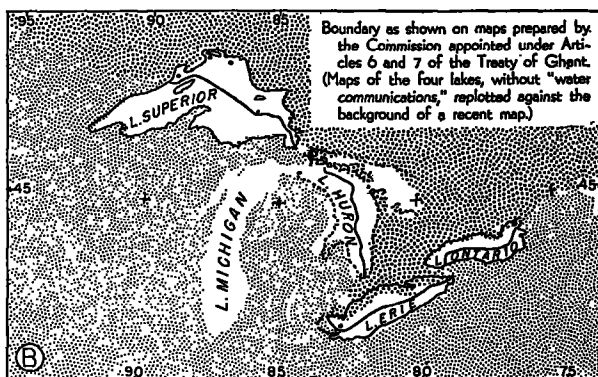
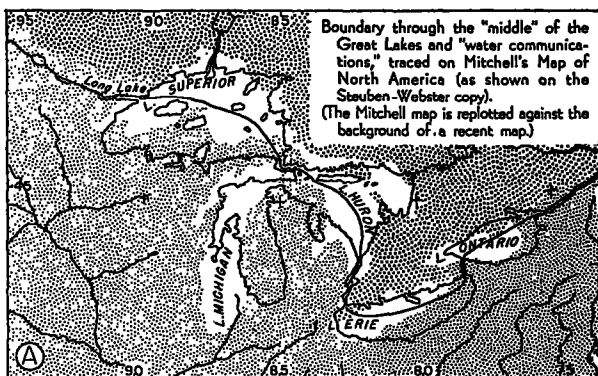


FIG. 6. THE INTERNATIONAL
BOUNDARY IN THE GREAT LAKES

lakes, and water communications" and as to the sovereignty of certain islands therein.

Figure 6 (B) shows all four Great Lakes through which the international boundary passes, as represented upon the compiled maps of the several lakes prepared by the commissioners under Articles 6 and 7 of the Treaty of Ghent. The inaccuracies in the mapping of the lakes, especially Lakes Erie and Huron, were still such that it has not been feasible to show the "water communications" between the lakes in accordance with the large-scale detailed maps prepared by the commissioners and based upon actual surveys, because the ends of the lakes do not bear proper relations to each other.

The two commissioners agreed upon all of the boundary covered by Article 6 of the Treaty of Ghent, namely, through the St. Lawrence River and Lakes Ontario, Erie, and Huron to the middle of the Huron-Superior "water communication."¹⁵ They submitted a report on this section of the boundary, accompanied by a series of maps.¹⁶ The commissioners did not agree upon certain portions of the water boundary under Article 7 of the Treaty of Ghent, from the foot of Neebish Rapids into and through Lake Superior and thence to the northwesternmost point of the Lake of the Woods.¹⁷

By the Webster-Ashburton Treaty, in 1842, the questions concerning the water boundary in the St. Lawrence River through the Great Lakes and to the northwestern point of the Lake of the Woods were settled, and the course of the boundary in the "water communications" between Lakes Huron and Superior and in the latter lake was added by hand upon the Ghent com-

¹⁵ *Ibid.*, Vol. 4, p. 415.

¹⁶ The declaration of the commissioners under Article 6 of the Treaty of Ghent, dated June 18, 1822, is in Miller, *Treaties*, Vol., 3, pp. 65-69 and is followed by notes, pp. 69-75. An account of their proceedings is in Moore, *International Arbitrations*, Vol. 1, pp. 162-70.

¹⁷ For a full account of the proceedings of the commissioners under Article 7 of the Treaty of Ghent, see Moore, *International Arbitrations*, Vol. 1, pp. 171-95. The separate reports of the American and British commissioners are printed with supporting documents, maps, etc., in House Document No. 451, 25th Cong., 2d sess., serial 331. The commissioners adjourned *sine die*, Oct. 27, 1827. See also Miller, *Treaties*, Vol. 4, pp. 414-26.

mission's maps. The boundary was still represented on the official maps as a *curved line*.

The International Waterways Commission, the creation of which was authorized in 1902, was empowered by Article 4 of the treaty of April 11, 1908, to ascertain and reestablish accurately the international boundary in the St. Lawrence and the Great Lakes, and it was agreed:

That wherever the boundary is shown on said charts [of the Ghent commission] by a curved line along the water the Commissioners are authorized in their discretion to adopt, in place of such curved line, a series of connecting straight lines defined by distances and courses and following generally the course of such curved line. . . .

The boundary as defined and delineated upon official charts prepared by the International Waterways Commission is shown on Figure 6 (C).

The International Waterways Commission has since gone out of existence.¹⁸ The maintenance of the Great Lakes boundary is now part of the responsibility of the International Boundary Commission under the terms of Article 4 of the treaty of February 24, 1925.

Modifications of the water boundaries. The fate of the middle-line water boundaries of the treaty of 1783 may be noted. In none of the waters through which the international boundary now passes does the boundary line follow the middle or median line. In the St. Lawrence River and the Great Lakes to the mouth of the Pigeon River the boundary now comprises 270 straight-line courses.¹⁹ The water boundary from the northwestern point of the Lake of the Woods to Lake Superior at the mouth of the

¹⁸ See International Waterways Com., *Compiled Reports*, 1905-13. (Canada. Sessional Paper No. 19a A.1913 3 George V). See also Miller, *Treaties*, Vol. 3, pp. 74-75, and Vol. 4, pp. 426-28.

¹⁹ Beginning at the "point of origin," thence to the Andrew Ellicott monument, thence to T.P. 1, and ending at T.P. 269 (which is identical with the terminus, T.P. 1797, of the boundary from the Lake of the Woods to Lake Superior). Two of the lines in the Great Lakes are *not* straight lines but follow parallels of latitude—one in Lake Ontario 501,388 feet long, and one near the western end of Lake Erie 77,106 feet long. See International Waterways Com., *Report* (Ottawa, 1916), pp. 30, 96, 133, 55, 67.

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Pigeon River now consists of 1,796 straight-line courses, and the boundary in the St. Croix River, 1,088. The boundary in Hall's Stream (adopted in 1842 by Webster and Ashburton for the "Northwesternmost Head of Connecticut River" of the 1783 treaty) comprises 766 straight-line courses in a distance of 26.6 miles.

CONCLUSION

The making of the boundary between Canada and the United States provides many illustrations of the difficulties encountered by treaty-makers in defining "paper boundaries based upon insufficient surveys." The controversies regarding this boundary, much of which was established antecedent to settlement, originated in the difficulties of finding on the face of the earth the rivers, highlands, and divides which corresponded with the terms of treaties and other diplomatic instruments. No problems in boundary-making could arise from demands to reestablish the frontier where it had been in earlier centuries.

The problems which had to be solved both by treaty-negotiators and by surveyors and engineers have been very considerable. They have all been solved, however, and the boundary is now one of the best-marked frontiers in the world.

Chapter IV

THE FUNCTIONING OF THE BOUNDARIES OF THE UNITED STATES

WHILE it is frequently desirable to know how a given boundary of the United States came to be established, it is even more important to know how the boundaries work today and how they affect the lives of the peoples on opposite sides of the frontiers. Moreover, in studying the boundary problems of other continents it is useful to be able to compare the boundaries of the United States as to the manner in which they function.

The same protective functions are exercised along the boundaries of the United States as along European frontiers, except that in our case there is no concern regarding military eventualities. Any nation must see to it that undesirable persons and goods do not gain entry across its borders and that revenues are not lost by illegal entry of admissible goods. The height of the tariff walls of the United States, and of Canada and Mexico, is sufficient to make the smuggling of various commodities alluring to would-be smugglers; and until the last few years the demand for cheap labor in the United States provided an incentive to smuggle aliens across the border.

Customs and Immigration

Both boundaries of the United States, generally speaking, are more readily crossed in either direction than many of the frontiers in Europe and Asia. Passports are not required of the citizens of the contiguous countries. Many persons travel by train or automobile from a point in the United States through Canada en route to a destination in the United States. The route from

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Buffalo to Detroit, for example, is shorter through the province of Ontario than through the states to the south of Lake Erie. Railroad passengers of the New York Central lines, crossing the boundary twice on a through journey, exceeded 356,000 in a recent year.

It would be a mistake, however, to suppose that it is always easier to cross an American boundary or to enter through one of its seaports than it is to gain admittance to some foreign state. The tourist or visitor in passing customs inspection at the United States-Canada border or the United States-Mexico border may experience as much difficulty as in crossing almost any European boundary in normal times. To smuggle an alien across an American boundary may likewise be as difficult and as hazardous as across a frontier in almost any other part of the world.

The border patrol of the United States immigration service was organized in 1924, largely to prevent alien smuggling. In 1939 it had about 850 officers and men including clerical help, laborers, and mechanics. About half the patrol force operates along the Canadian frontier and half on the Mexican frontier. Although the length of the boundary with Mexico is only half of that with Canada, the number of alien crossings from Mexico into the United States is fully equal to the number from Canada. In the fiscal year 1939 the officers and men on border patrol duty traveled 7,824,733 miles, including 271,222 miles on foot. Inspectors questioned 1,012,242 individuals, boarded 122,985 passenger and freight trains, and examined the occupants of 377,890 automobiles and buses and the passengers on 58,862 boats and other conveyances. During 1939, 12,685 apprehensions were made by the border patrol, including 137 smugglers of aliens, 960 on warrant of arrest, 11,077 other illegal entrants, and 511 other law violators. Legitimate travelers are inconvenienced as little as possible. The men must be well trained and must be discreet and tactful in dealing with all those whom they do not have reason to suspect of illegal intentions.

Both the northern and southern boundaries of the United States operate as simple, definite lines. In some parts of Europe,

particularly in areas where the boundaries have been shifted in recent decades, transition zones have been established. In these areas a person living within a border zone a few miles wide may operate a farm on both sides of the boundary without regard for customs regulations; he may pasture his cow on one side of the frontier and milk it on the other. In some of these zones the inhabitants may take across the boundary enough food and tobacco for one day, and one box of matches. (With reference to pasturage and local boundary regimes in Europe, see pages 97-106 and Appendix C.) There are no such frontier regimes along the boundaries of the United States.

Provision is made for many thousands of commuters to cross the Canadian border daily, much as do the industrial workers along the Belgian-French frontier. The examination of the baggage of an individual who is crossing the border in his automobile is made at the customs station on the boundary. Although passports are not required on either frontier, the necessary formalities involved in permitting persons to go from one country to the other must be taken care of at the immigration office on the boundary. Passengers on railroad trains must pass customs and immigration inspection within fixed distances from the border, which vary along the different railroads that cross the boundary. Railroad freight goes to an inland port of entry before it is required to pass customs inspection.

The total volume of travel across the two frontiers of the United States is difficult to estimate, for available statistics do not present the full picture. United States schedules provide for both "statistical" and "nonstatistical" arrivals and departures, but the "nonstatistical" records are not complete. There are regular immigrants who may cross the border but once. There are tourists and temporary visitors from both sides of both boundaries. The United States issues immigrant-identification cards or border-crossing cards which may be used either by commuters or others who cross daily or frequently. Whatever may be the adequacy of available statistics, certainly the total numbers, including residents of the United States going into Canada or Mexico and

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residents of those countries coming into the United States, are very large in comparison with the number of similar crossings between countries in Europe. It should be remembered, also, that these New World countries are all large and that, therefore, many persons travel in their own country as far, let us say, as from Paris to Budapest or even Istanbul before they cross an international boundary.

According to statistics prepared by the United States Department of Labor, the inward movement of citizens and aliens over the boundaries with Canada and Mexico was about equal for the year ended June 30, 1938, as shown by Table 3:

TABLE 3
PERSONS CROSSING UNITED STATES BORDERS ^a

	<i>American Citizens</i>	<i>Aliens</i>	<i>Total</i>
Canadian border	15,740,505	14,230,131	29,970,636
Mexican border	8,601,983	14,421,370	23,023,353
TOTAL	24,342,488	28,651,501	52,993,989

^a Each entry of each person is considered a separate transaction. At many ports of entry an actual count was made, and at other ports the number was estimated.

Of the aliens crossing the border, all but a small fraction were temporary visitors for business or pleasure, who sought admission for only a few hours or a few days before returning to their homes in Canada or Mexico. Border-crossers of this type are necessarily subjected only to limited inspection, but it is incumbent on the immigration officers at the border to segregate from the thousands arriving every day those who may not be admissible or whose statements concerning their status and intentions may be open to question. The inspection problem is constantly increasing in difficulty with the opening of new highways and bridges and with steady increase of automobile traffic due to better roads.

The "invisible imports" of tourist expenditures amount to considerable sums. It is estimated that in 1938 American travel-

ers in Canada spent \$259,000,000, of which \$180,000,000 was spent by motorists in a total of 4,346,645 automobile crossings. Canadian travelers in the United States spent approximately \$104,000,000.¹

Reservations of Lands Adjacent to the Boundaries

In order to facilitate enforcement of the customs and immigration laws of the United States, all unpatented public lands of the United States within 60 feet of the Canadian boundary were set apart as a public reservation by proclamation of the President, June 15, 1908. Similar reservations of lands not previously passed to private ownership have been made by several of the provincial governments of Canada; the lands vary in width from 60 feet to 1½ chains (99 feet).²

Along the United States-Mexico boundary, all public (Federal) lands in California, Arizona, and New Mexico³ within 60 feet of the international boundary were set apart as a public reservation by proclamation of the President, May 27, 1907.⁴ All such lands are to be "kept free from obstruction as a protection against the smuggling of goods" between the United States and Mexico. In Mexico somewhat similar provision is made for the reservation of lands along a zone 20 meters in width.

THE CANADA-UNITED STATES BOUNDARY

Historical Functioning of the Boundary

The manner in which the United States-Canada boundary has functioned, as may be readily appreciated, has changed profoundly since the line was first defined by treaty. From early pioneer days, when the Detroit River was crossed only by canoe and rowboat, the role of the boundary has undergone a great metamorphosis. Automobile traffic alone, through the busy port

¹ U. S. Bur. of For. and Dom. Com., *Balance of International Payments of the U. S. in 1938*, pp. 37, 85.

² The texts are in *International Boundary Com., U.S. and Canada, Report . . . Gulf of Georgia to . . . Lake of the Woods*, pp. 22-24.

³ There are no Federal public lands in Texas.

⁴ 35 Stat. 2136-37.

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of Windsor, Ontario, by tunnel, bridge, and ferry, required in 1938 a Canadian staff of 108 customs officers; more than 800,000 American cars and nearly 60,000 Canadian cars crossed during one year under touring permits; total passenger crossings by automobile exceeded 6,750,000 each way. These figures take no account of the many who traveled by railroad, motorbus, and on foot.

Along the northeastern boundary the manner in which the boundary operates has undergone a gradual change. Except for the industrial centers, the greatest development on the entire frontier has probably occurred along the 49th parallel. East of the Rocky Mountains, as has been remarked, "an astronomical line has been a good boundary, a bad boundary, and again a good one, as human occupancy of the Great Plains has passed thru successive stages."⁵ Although the northern Great Plains were penetrated in the middle of the eighteenth century, Americans and Canadians got along with an unsurveyed boundary until 1872 because in the fur-trading period white inhabitants were few, and the smaller and more valuable fur-bearing animals were not abundant in the grasslands. Then buffalo hides became an important item, as wagons, river steamers, and finally railways penetrated the Middle West and as settlements sprang up. The roving buffalo paid no respect to the 49th parallel. The years 1860-85 saw much lawlessness and many "bad actors," and "Judge Colt" ruled the Great Plains. The situation led to the survey of the boundary and to the formation of the Canadian Northwest Mounted Police. Finally the third and present stage of development set in. The Union Pacific Railway had been completed in 1869, and British Columbia had obtained a pledge of a trans-Canadian railway as a condition of its entry into the Dominion of Canada in 1871. The Canadian Pacific was completed in 1885.⁶ Now that east-west railroads have reoriented travel and farming and ranching on fenced ranges have displaced buffalo hunting, cattle stealing, and horse rustling across the frontier,

⁵ Jones, "Forty-ninth Parallel," p. 357.

⁶ See also Jones, "Cordilleran Sect. of the Canada-U.S. Borderland."



PLATE II. BOUNDARIES OF THE UNITED STATES

Above, left: Ambassador Bridge between Detroit, Michigan, and Windsor, Ontario. Photograph from the American Commercial Photo Co., Detroit. Right: A boundary vista on the 49th parallel, British Colombia-Montana, near Monument 249, looking east. Photograph from the International Boundary Commission. Below, left: Boundary in the rectified channel of the Rio Grande, with 1933 course now abandoned; Ciudad Juarez on left, El Paso on right. See also Fig. 8: 1930 and 1936 courses of the river. Photograph from the International Boundary Commission. Right: Boundary fence between Nogales, Arizona (left) and Nogales, Sonora. Acme Photo.

the boundary operates smoothly and, it might be said, normally or "naturally," although the line is conspicuously "artificial."⁷

"The Unguarded Boundary"

In a notable address, the Honorable John W. Davis called the boundary of Canada with the United States and Alaska "the unguarded boundary."⁸ That characterization is significant in relation to the functioning of the boundary.

On a front of 5,400 miles, or, roughly, as far as from New York to Buenos Aires or Petrograd, or from London to Cape Town or Bombay, by land and water, over mountain and plain, through prairie and forest, the British Empire and the United States meet each other face to face, without thought of defense or fear of aggression. In all that distance the only sentinels that guard the line are the silent monuments erected by the joint action of the two nations; the only vessels are the unarmed ships which carry the commerce of their common waterways; the only weapons are the woodman's ax, the huntsman's rifle, and the tools of fruitful trade and agriculture. Peace reigns from end to end as profound and undisturbed as the quiet of the primeval forest that still clothes many reaches of the boundary line. It is a peace, moreover, not of monotony or of solitude, for a journey along the windings of this far-flung frontier is an epitome of the industrial and commercial life of the two countries. . . . [Page 585.]

Any member of the Canadian Parliament or American Congress who offered now a bill appropriating money to fortify the border would be regarded as mildly insane. In 1817, by a simple exchange

⁷ The 49th-parallel boundary is not infrequently the subject of comment by European writers. Fawcett writes: "The papers of British Columbia and Washington find in the International Boundary and its absurdities a source of jokes as prolific as the mother-in-law. Given goodwill between the peoples the boundary is workable. . . . This is perhaps the least efficient and most costly boundary line on the earth." (Fawcett, *Frontiers*, pp. 68, 69.) Such a boundary in Europe would be inconceivable. If the country had been well surveyed and mapped before the boundary was fixed by the treaties of 1818 and 1846, doubtless a boundary could have been established which would have avoided some of the problems that have subsequently developed, especially in relation to the use of the waters of rivers. The boundary has been rather costly to survey and establish with the degree of accuracy now demanded. But the 49th-parallel boundary works well and with moderate administrative cost.

⁸ "The Unguarded Boundary," an address delivered before the American Geographical Society on April 25, 1922. *Geog. Rev.*, Vol. 12 (Oct., 1922), pp. 585-601.

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of diplomatic notes,⁹ war vessels were banished from Lake Champlain and the Great Lakes, and the agreement, adjusted to meet the changing conditions of ship construction and revenue patrol, endures to this day. So it has been, so may it continue. Need I point the obvious moral? Is it not the old truth that trust is wiser than distrust, that confidence is nobler than jealousy, and that there are saner ways than war for nations to settle their disputes? Long may these neighbor commonwealths endure to teach that lesson to the world; and, if ever in the future passions should agitate or angry words divide them, may they turn for admonition and for warning to the Unguarded Boundary. [Page 601.]

Along this great unfortified frontier the only guards are those required to ensure the enforcement of the laws of the two countries, chiefly with regard to customs and immigration.

International Boundary Commission

Continuous functioning of the International Boundary Commission is an important factor in the efficient operation of the boundary. In order to provide for the maintenance of an effective United States-Canada and Alaska-Canada boundary line, it was agreed in 1925¹⁰ that the two boundary commissioners appointed under the treaty of 1908 to complete the demarcation of the entire United States-Canada boundary shall constitute a permanent commission, directed

to inspect . . . the boundary . . . ; to repair all damaged monuments and buoys; to relocate and rebuild monuments which have been destroyed; to keep the boundary vistas open; to . . . establish such additional monuments and buoys as they shall deem desirable; to maintain at all times an effective boundary . . . ; and to determine the location of any point of the boundary line which may become necessary in the settlement of any question that may arise between the two governments.

The maintenance of effective boundary lines on the two great transcontinental frontiers from the Atlantic to the Pacific and on

⁹ The text of the diplomatic notes exchanged on April 28 and 29, 1817, together with editorial notes, is in Miller, *Treaties*, Vol. 2, pp. 645-54.

¹⁰ Treaty between the United States and Great Britain, signed Feb. 24, 1925 (U.S. *Treaty Ser.* No. 720), Article 4.

the Alaska boundary from the Pacific to the Arctic is a task of considerable magnitude. Monuments may be damaged or destroyed; questions arise as to the exact location of the boundary in relation to new highways, bridges, or buildings. The two commissioners inspect portions of the boundary annually and supervise field parties in carrying out all of the provisions of the treaty. They are engaged in reestablishing the water boundary in the St. Lawrence and the Great Lakes which was originally surveyed and marked by temporary reference marks on land by the International Waterways Commission.

In carrying out the 1925 treaty provision "to keep the boundary vistas open," the two boundary commissioners have agreed to keep the trees and brush cut in the timbered sections of the boundary along a strip of sufficient width to maintain a clear twenty-foot sky line along the boundary. Through the approximately 930 miles of forest growth traversed by the United States-Canada boundary a vista is kept cleared. Along the Alaska boundary a similar vista is kept open through 412 miles of timber. A boundary vista on the 49th parallel is shown on Plate II, facing page 60.

Trade Agreements with Canada

Since we are concerned not only with the nature of the boundary functions (theoretically nearly uniform the world over) but also with the manner in which they are applied, the changes in the tariff wall between Canada and the United States which have been effected by means of the trade agreements of 1935 and 1938 between the two countries deserve consideration. These agreements cover commodities which make up the great bulk of United States-Canada trade in each direction. Trade has increased in both directions since 1935, and the increase has been greater for those products on which the rates were reduced or removed altogether. Canada has three tariff rates on many products: a maximum rate (which applied to the United States prior to the trade agreements), an intermediate rate accorded to "most favored foreign nations," and a minimum rate within the British

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commonwealth of nations. An essential element of the trade-agreements program, the most-favored-nation provision, gave the United States the benefit of lower rates accorded to imports into Canada from "most favored foreign nations" in bilateral tariff agreements with France and with other countries; this feature alone reduced the rates on several hundred items of imports from the United States into Canada. On various products the reduction gives the United States a rate lower than the "most favored foreign nation."

Of the twenty-two countries with which the United States has concluded trade agreements, Canada is the only contiguous nation, and it is the one with which trade is usually the largest. The Canadian agreements should be considered as part of the comprehensive trade-agreements program initiated by the American Secretary of State, Cordell Hull, which is designed to reduce not only the tariff barriers between the United States and other countries but also between each of the countries with which agreements are concluded and between other countries not directly participating in the program. The effect of the program is thus to simplify the functioning of international boundaries throughout the world, economically speaking, in the degree in which the program is accepted by foreign countries.

International Joint Commission

The International Joint Commission,¹¹ consisting of three members appointed by each of the two countries, was organized in 1912 under provisions of a treaty negotiated by the British ambassador, James Bryce (later Lord Bryce), and the American secretary of state, Elihu Root, and signed at Washington in 1909.¹² The commission has original and final jurisdiction in all matters relating to problems concerning the use, obstruction,

¹¹ See Chacko, *International Joint Commission*; Callahan, *American Foreign Policy*, chap. xxi, pp. 534-62; Burpee, "From Sea to Sea"; *Papers . . . International Joint Commission*.

¹² Treaty between the United States and Great Britain relating to boundary waters between the United States and Canada, signed at Washington, Jan. 11, 1909. U.S. *Treaty Ser.*, No. 548.

diversion, and pollution of the waters of the 2,198 miles of water boundary and concerning rivers that flow across the boundary. By other provisions of the treaty (Article 9) the two governments may refer to the commission for examination and report any other questions or matters of difference involving rights, obligations, or interests along the common frontier, both land and water; such reports are not regarded as decisions and do not have the character of an arbitral award.

In considering problems involving the use, obstruction, or diversion of waters, the order of precedence prescribed by treaty puts first claim upon water for domestic and sanitary purposes, second for navigation, and third for power and irrigation. Problems of great complexity and importance have been settled by the commission. The accompanying map (Figure 7) indicates the principal questions that have come before the commission.¹³ Problems have arisen relating to all parts of the boundary and to waters rising on both sides of the frontier. It will suffice, by way of illustration, to recount briefly the handling of one of the problems.

The St. Mary and Milk rivers both rise in Montana and flow across the boundary into Alberta. The St. Mary empties into the South Saskatchewan and thus drains into Hudson Bay. Milk River, after following a course of a hundred miles or more in Canada, returns to Montana and discharges into the Missouri River on its way to the Gulf of Mexico. Article 6 of the treaty of 1909 provides that the St. Mary and Milk rivers "are to be treated as one stream for the purposes of irrigation and power, and the waters thereof shall be apportioned equally between the two countries." When the question came up for consideration, counsel for the two governments did not agree upon the interpretation of the treaty itself. The International Joint Commission adopted a sensible course in going to Montana and Alberta, gathering groups of representative farmers around a table, discussing problems frankly and informally, and preparing an order which gave the farmers what they needed—water for their land. It was found

¹³ The map is copied from one in Burpee, "From Sea to Sea."

unnecessary to decide exactly what the treaty meant or did not mean so far as the points of difference in interpretation were concerned. The project included the construction of a canal from a point on the St. Mary River to a point on the Milk River; the United States share of the water of the former is conveyed by the canal and the Milk River to irrigable lands in Montana, and Canada takes her share of the water by irrigation canals from the St. Mary River on the Canadian side.

The International Joint Commission is perhaps unique in that it is possible for private citizens of the two countries to appear before this international body, whose jurisdiction is final in matters that affect them vitally, and to present facts bearing upon the exercise of their common right to the use of a common property. It is also significant that thirty-nine of the forty decisions of the commission have been unanimous.

THE MEXICO-UNITED STATES BOUNDARY

For a distance of approximately 1,210 miles along river meanders, Mexico and the United States are separated by the Rio Grande; for about 20 miles they are separated by the Colorado River at the jog between the Arizona-Sonora and the California-Lower California boundaries; and the land boundary, between El Paso and the Pacific Ocean, is 675 miles long. The total length of approximately 1,905 statute miles is subject to variation because the length of the river boundary changes, especially on the Rio Grande, due to the minor changes constantly in process through natural action.

Boundary Problems

When the treaties of 1848 and 1853 were negotiated by the United States and Mexico, the territory adjacent to the boundary was almost uninhabited; there were a few small settlements on the Rio Grande, but to the west of the Rio Grande from Paso del Norte (now Ciudad Juárez) to the Pacific the boundary traversed country that was in general devoid of trees, water,

and human population. So far as the rivers were concerned, the principal interest was in navigation.

In recent decades, cities and towns have grown up on both sides of the boundary, including San Diego with a population of 150,000; El Paso, 100,000; Ciudad Juárez, 19,000; Laredo, 30,000; Nuevo Laredo, 15,000; and many others. Irrigable land has increased in value to as much as \$1,000 an acre in certain favored areas. The principal interest in the rivers is now in irrigation and in water supply for cities; navigability of both the Rio Grande and the Colorado is considered only as a legal technicality on account of the provisions of the earlier treaties.

Water diversion. The Treaty of Guadalupe Hidalgo, which fixed the boundary in the Rio Grande in 1848, provided that "the navigation of . . . the Bravo¹⁴ . . . shall be free and common to the vessels and citizens of both countries." No reference was made to any other possible use of the river. Ships never ascended the Rio Grande more than thirty miles from the mouth, and for many years there has been no navigation either on the Rio Grande or on the Colorado River (a short portion of which became the boundary in 1853). Later treaties dealt with questions concerning the distribution of the waters of the boundary rivers. Today all of the interest in these two rivers and in the small Tia Juana River which crosses the California boundary centers in the use of their waters for irrigation or for city water supply and in the prevention of disastrous floods.

Within a quarter-century after the railroad reached Brownsville, Texas, in 1904, intensive development of the lower Rio Grande valley, with its rich soil, semitropical climate, and waters obtained from the Rio Grande, brought values of approximately \$300,000,000 to more than 350,000 acres which were brought under irrigation. In the same period, land values on the lower Colorado River reached a total of \$500,000,000.

The drainage basin of the Rio Grande covers 177,500 square

¹⁴ "The Rio Grande, otherwise called Rio Bravo del Norte" in Article 5, but here, in Article 7, referred to only as "the Bravo."

miles. Slightly more than half is in the United States. About 1,700,000 acres are under irrigation, of which 1,400,000 acres are in the United States. Although the Rio Grande rises in Colorado, more than half of the water available for irrigation comes from tributaries on the Mexican side of the boundary. Below Fort Quitman seventy percent of the irrigated land is in the United States, whereas Mexico furnishes seventy percent of the water.

The situation in the Colorado basin is quite the reverse of that on the Rio Grande. Almost all of the 240,000 square miles of the Colorado River drainage basin lies in the United States, which supplies all the water. Fertile land below the boundary could be made highly productive if it could receive more water for irrigation from the Colorado.

Thus on the Rio Grande the farmers on the American side need water from the Mexican side. And on the Colorado Mexican farmers need water from the American side. Reference may be made to the Elephant Butte Dam and reservoir, which provide storage and protection against floods for El Paso, Ciudad Juárez, and that part of the Rio Grande valley immediately below those cities. The Boulder Dam on the Colorado River is another important factor. Boundary problems of great magnitude and of considerable delicacy arise from many factors which are merely suggested here to afford some idea of the difficulties involved.¹⁵

*Rectification of the Rio Grande.*¹⁶ The Rio Grande has been a very unstable river, carrying great quantities of silt and being subject to violent floods. Between 1907 and 1933 the river bed was raised eight feet by silt deposition in the vicinity of El Paso, and between El Paso and Juárez the river bed was actually higher than certain principal streets in those cities.

After due engineering study, a flood-control reservoir was built at Caballo, New Mexico, to control all flood waters above

¹⁵ See Timm, "Some International Problems."

¹⁶ See convention between the United States and Mexico relating to the rectification of the Rio Grande, signed Feb. 1, 1933, U.S. *Treaty Ser.* No. 864 (maps and profiles attached).

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the dam. The old river channel in the El Paso-Juárez valley, from those two municipalities to the mouth of the Box Canyon below Fort Quitman, was straightened, the rectified channel being formed by the construction of parallel levees. The length of the river in its meanderings in this section was reduced from 155 miles to 86 miles. The shorter course and increased gradient stopped the silting and the raising of the river bed. At El Paso the river bed was lowered. The parcels of land cut off from

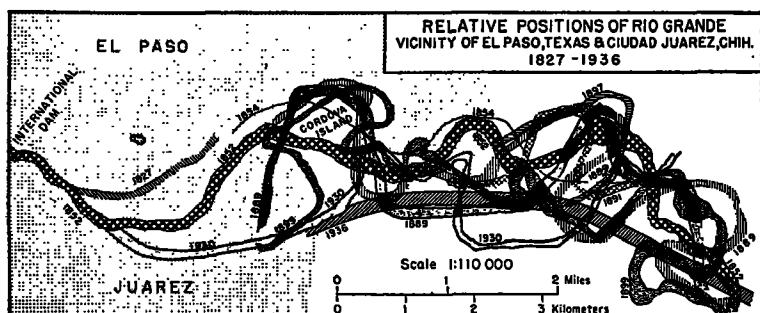


FIG. 8. FLUCTUATIONS OF THE RIO GRANDE NEAR EL PASO AND CIUDAD JUAREZ, 1827-1936

(Map made by the United States section, International Boundary Commission, United States and Mexico.)

Mexico and the United States by making the middle of the deepest channel in the rectified river serve as the international boundary were exchanged and made exactly equal in area, about 3,500 acres of land on each side.

The total cost was prorated between Mexico and the United States in proportion to the benefits computed to be derived by each country; on that basis Mexico paid twelve percent and the United States paid eighty-eight percent of the total cost. The rectified channel and the cutoff meanders in the Rio Grande immediately below El Paso and Juárez are shown on the aerial photograph reproduced on Plate II, facing page 60.¹⁷

¹⁷ See Reinhardt, "Rectification of the Rio Grande."

The International Boundary Commission

The International Boundary Commission, United States and Mexico, operates under the provisions of treaties of 1889, 1906, and 1933. It comprises, from each country, a commissioner, a consulting engineer, secretaries, and interpreters and maintains offices in El Paso, Texas, and in Ciudad Juárez, Chihuahua, on opposite sides of the Rio Grande.

Under the terms of various treaties, the commission has exclusive jurisdiction in all questions that arise along the water boundary. By a natural development and with the complete approval of the two governments, but without treaty authority, the commission exercises full jurisdiction in all matters pertaining to the land boundary. It maintains a properly demarcated boundary, makes stream-gaging studies, handles all engineering problems including the great rectification project on the Rio Grande, and settles disputes between private parties. It thus exercises functions similar to those of the United States-Canada boundary commission in the maintenance of the line, other functions analogous to those of the International Joint Commission, and additional engineering and technical responsibilities. Probably no other international commission on any other boundary in the world has such a wide range of duties and discharges them in a manner that more effectively reduces the current problems to a minimum.

CONCLUSION

The boundary problems relating to both the Canadian and Mexican boundaries of the United States are perhaps as complex and as difficult to solve as those relating to any boundary in any other part of the world. They are largely of a technical nature, especially those concerning the use of water. Other problems of considerable magnitude arise from the facts that great numbers of persons travel across the frontiers for pleasure and that the numbers are increasing as new and better roads are built and as new bridges span the international rivers at large

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population centers. Nowhere on either border are there problems like those of the Old World that spring from a desire to shift a boundary to a position that it occupied decades or centuries ago.

The boundaries of the United States operate more simply than most of those in Europe, for example, because in general they were established before settlement had passed the frontier stage (a factor contributing to universal acceptance without reservation), and because both the governments and the peoples themselves are disposed to play down, rather than to magnify, any incipient sources of trouble. Border incidents may occur as readily along a frontier in a rugged region with sparse population as in a densely peopled area with "all modern improvements." Nothing is to be said in favor of placing a boundary where people already mingle in large numbers, as a means of making peoples better acquainted and of promoting peace. But where industrial development has spanned a boundary previously established, as in the Detroit area, and where many millions of tourists cross annually, as they now do at many points on both borders of the United States, the situation operates as a gigantic flywheel that tends to smooth over the interruption of any minor frontier incidents. Such incidents could readily be played up in a region which had little news, but few would choose to pay any attention to them along busy frontiers like those of Canada and Mexico with the United States.

If on either side of either boundary a spirit of ill-will were engendered or if problems relating to the boundary were allowed to go unsolved until personal grievances and local issues became national issues, problems of considerable magnitude might develop. A boundary is not merely a line on a map or a series of monuments on the ground. People's lives are affected by its existence and by the functions which governments and peoples attach to the boundaries. The Canada-United States and Mexico-United States boundaries work well largely because adequate provision has been made to handle problems by reference to commissions which are competent to deal with

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the engineering, legal, and human aspects of the situations. In fact, few boundaries anywhere in the world operate with less friction and with greater adaptation to the needs and interests of the peoples concerned than the frontiers of the United States with both Canada and Mexico.

Chapter V

SOUTH AMERICAN BOUNDARIES

IN THE CONTINENT of South America there are altogether twenty-five international boundaries—nineteen between the ten republics, four between a republic on one hand and one of the Guianas on the other, and two between the European possessions in the Guianas.¹ Except for a few minor details here and there, all but one of these boundaries have now been definitely established.

In proportion to continental area, the total length of all the international boundaries in South America ranks second only to that in Europe. This is not surprising when one recalls that one of the longest boundaries in the world is that between Argentina and Chile in the tapering portion of the continent where area is at a minimum and that several of the countries are of relatively small size, including the three Guianas.²

Although most of the twenty-five boundaries have their roots well back in the colonial history of the continent, none of the Spanish provincial boundaries had been demarcated and none of them had been defined with such exactitude, when the process of emancipation began, that they could be adopted by the newly formed republics without difficulties in interpretation. Most of the boundaries have been defined since 1850 and many of them within the last fifty or sixty years.

When one considers South America as a whole it is indeed astonishing and gratifying that so many boundaries were established by pacific means. It should be recalled that an ex-

¹ The boundary between Colombia and Panama is not reckoned here as one of the boundaries *in* South America, but is assumed to be the political limit of the continent. Geographically the continent is usually regarded as extending somewhat beyond the Panamanian frontier.

traordinary number of problems arose in establishing the boundaries, following upon a period in which the authority of the Old World was severed by means of force; that the attempt was made to fix the frontiers as far as feasible in accordance with the terms of an almost continuous stream of Spanish decrees and laws relating to administrative, judicial, and ecclesiastical jurisdictions which overlapped one another; that precision of definition of boundaries could not exceed the contemporary inadequate geographical knowledge of a vast new continent; and that no controversies are more disturbing to amicable relations between nations than those relating to boundaries. Not without reason is Brazil rather proud of the fact that all of its ten boundaries have been peacefully determined;² and several of the remaining fifteen frontiers of the continent have likewise been established without recourse to armed conflict. The complexities of the problems involved, partly because little geography was known and a great deal of history was remembered, account for the large place that boundary-making occupies in the history of South America.

Boundary types differ from those of other continents in the proportions in which they have been utilized. River boundaries are numerous and extensive, including the Orinoco and Meta; the Courantyne, Maroni, and Oyapock in the Guianas; and the Putumayo, Javary, Purus, Abuná, Guaporé, Paraguay, Apa, Paraná, Pilcomayo, and Uruguay. Watershed boundaries are also extensive, including chiefly those of Brazil with Venezuela and with two of the Guianas, and the larger part of the Argentina-Chile frontier. Straight lines and other so-called artificial boundaries are comparatively rare in a continent where boundaries have had to be defined in territories that were at the time very imperfectly mapped.

International boundaries in South America have, in almost all instances, been established antecedent to settlement by European peoples. The population clusters that are typical of population distribution in South America are separated from

² See d'Eça, "Brazilian Boundary Disputes."

one another by scantily occupied territory. Even now, after boundary-making is almost complete, the frontiers lie in areas of relatively sparse settlement save for portions of the Ecuador-Colombia and the Colombia-Venezuela boundaries³ and the Bolivia-Peru boundary in the Titicaca basin.

In order to obtain a clear idea of South American boundaries as a whole it seems advisable to consider first the fundamental bases of boundary-making in that continent and then to discuss briefly a few outstanding problems.

BASES OF BOUNDARY-MAKING IN SOUTH AMERICA

The "Demarcation Line"

The earliest attempt at boundary-making in the New World was that of Pope Alexander VI in 1493, whose "demarcation line" between the lands of Spain and Portugal was modified by mutual agreement between the two sovereigns in the Treaty of Tordesillas in 1494. That "demarcation line" was defined in the 1494 treaty as the meridian of longitude passing through a point 370 geographical leagues to the west of the Cape Verde Islands. As the outlines of South America became known subsequent to the 1494 treaty, however, for three reasons it was impossible to find where such a meridian actually cut the continent of South America: (1) the initial point in the Cape Verde Islands was not specified; (2) the length of a geographical league could not be known until the circumference of the earth had been measured (this was done much later by geodetic means); and (3) it was impossible to determine longitude at sea until well more than a century later. Attempts to ascertain where the Tordesillas demarcation line traversed South America varied from about 42 degrees 30 minutes to 50 degrees west of Greenwich, the westernmost meridian striking the north coast of South America near the mouth of the Amazon. The difference between these

³ See James, "Distribution of People in South America," *Geographic Aspects of International Relations*, pp. 217-40, especially pp. 218-19. The map facing p. 218 is here reproduced; the boundaries have been brought up to date.

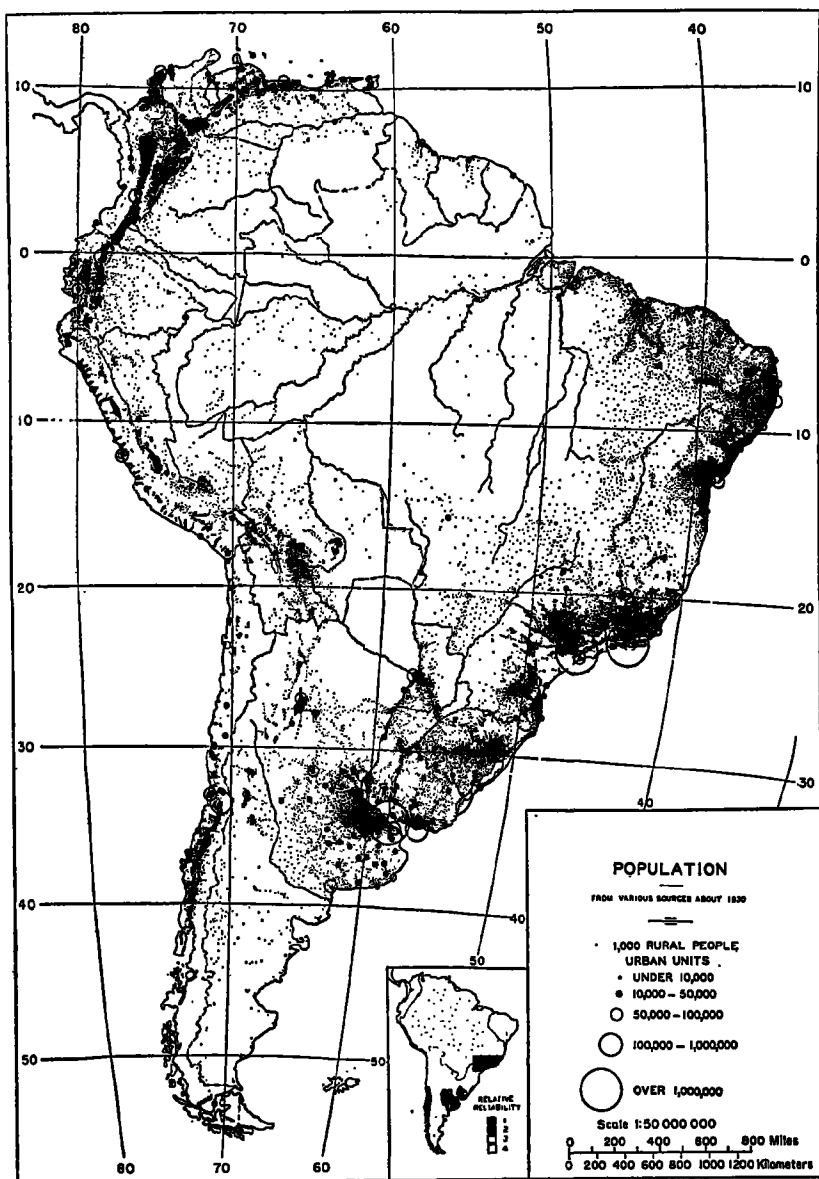


FIG. 9. SOUTH AMERICA: POPULATION DISTRIBUTION

(Map prepared by Preston E. James; used by permission.)

extremes was a little less than the difference in longitude between New York City and Cleveland, Ohio.

The boundaries of Brazil trace their origin to the limits of Portuguese and Spanish colonization of the continent that were based upon that "demarcation line." Penetration up the "liquid

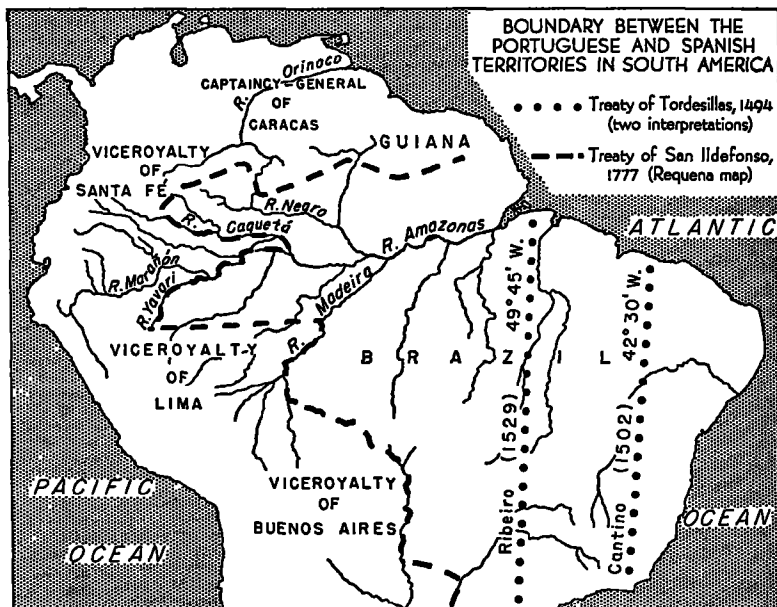


FIG. 10. THE DEMARCATION LINE IN SOUTH AMERICA

equator" of the Amazon and its tributaries was relatively easy, and by the time the Spanish colonies began to effect their independence in 1810 the zone of separation between Spanish and Portuguese territory in South America everywhere lay farther west than the westernmost interpretation of the demarcation line.

The demarcation line had been, in fact, entirely superseded by the treaty of Madrid concluded by Spain and Portugal, January 13, 1750, the provisions of which were modified by the

treaty of San Ildefonso of October 1, 1777. By the first of these treaties, Spain and Portugal made a fresh start in delimiting their territories and agreed that each party should remain in possession of what it then held and that in defining their boundary they would adopt natural features—rivers and their sources, and mountains—so far as feasible. The treaty of Madrid of 1750 is at least partly responsible for the fact that international boundaries in South America follow rivers and mountains to an extent greater than in other continents.

The Principle of Uti Possidetis

The literature relating to boundaries of the American republics from the Rio Grande to Cape Horn contains frequent references to the principle of *uti possidetis*. The term is derived from Roman law, "in which it designated an interdict of the Praetor, by which the disturbance of the existing state of possession of immovables, as between two individuals, was forbidden."⁴ In international law its meaning is more fully expressed in the words *uti possidetis, ita possideatis*, "As you possess, so may you possess." As applied to Latin-American boundaries, it signified in regard to new republics carved from former Spanish domains (and likewise in the case of Brazil) that the independent country was the successor of the viceroyalty, captaincy general, or other entity of the colonial period within the same territorial limits of this colonial entity and essentially at the date when independence was proclaimed. Sometimes a distinction is made between *uti possidetis juris*, meaning essentially "as you have a legal right to possess" according to the documents antedating independence, and *uti possidetis de facto*, signifying "as you now actually possess."

The principle of *uti possidetis* came to possess a significance in regard to Latin-American boundaries which was necessarily very great and in many instances preponderant. As the Spanish crown created new vicerealties, *audiencias*, and other jurisdictions, large and small, and at times abolished some or combined

⁴ Moore, *Costa Rica-Panama Arbitration*, p. 5.

two or more, the map of Latin America became a sort of palimpsest from which the earlier inscriptions of colonial domain were supposedly erased in order that new writings might supersede them. During the colonial period the inconsistencies and ambiguities incident to a long series of acts of the crown did not cause great confusion, because the power of a viceroy or captain general was currently subject to reference to the reigning sovereign. The independent nations, however, reading back into the colonial record of royal *cédulas*, *órdenes*, and decrees of various kinds, naturally sought the record of the past which seemed best to support claims to desired territory. In very sparsely occupied territory there was sometimes no effective possession, and claims based on the texts of documents, sometimes widely conflicting, were the only possible claims. In the absence of effective occupation and administration, *uti possidetis* could only mean, in effect, "as you have a right to possess, according to the recorded acts of the sovereign and the known facts relating to jurisdiction of his agents."

Consequently, with the intention of applying the most reasonable principle in setting up each new republic in business within the territories to which it had a natural right, the problem of applying the *uti possidetis* was much more complicated than one might anticipate. The term appears in many treaties and arbitral awards, but its use seldom if ever removes ambiguity. If there had been no debate regarding the place where the boundary rightly belonged, there would have been no occasion to employ the term *uti possidetis*; but the use of the term implied only an abstract principle and did not dispose of the problem of territorial delimitation to which it was meant to be applied.

BOUNDARY PROBLEMS

Triple Points and Multiple Overlapping Claims

Every international boundary necessarily has two ends, unless one nation is completely surrounded by another state as the little principality of San Marino is surrounded by Italian territory.

At each end of any boundary, unless one end is on the coast, the two countries concerned meet a third country at what is called a "triple point" or *triplex confinium*. At that point three countries meet and three boundaries terminate. In South America there are thirteen "triple points" at inland ends of the twenty-five international boundaries.⁵



FIG. 11. TRIPLE POINTS
ON SOUTH AMERICAN
BOUNDARIES

During a considerable part of the nineteenth century, in various areas, boundary controversies arose between all three countries that now meet at a triple point, relating sometimes to a very large area around that point. Because a boundary is a line upon which two countries must agree, the two would naturally

⁵ Of the 50 boundary termini of the 25 South American boundaries, 11 are on the coast (eight coastal republics and the three Guianas); the remaining 39 boundary termini meet at 13 "triple points." All of them are defined except that of Colombia-Ecuador-Peru, which depends upon the establishment of the boundary between Ecuador and Peru.

prefer to negotiate alone concerning their common frontier, from one end to the other. In areas of widely overlapping claims, however, the usual experience was for the two countries to discover that a third country disputed their right to be fixing a boundary in that region at all, since the third nation claimed sole jurisdiction in territory in which the entire final portion of the frontier was to have been established by the first two nations. The story of the fixing of the present thirteen triple points of South America would epitomize much of the boundary history of the continent; but it would be surprisingly complicated.

The establishment of the Bolivia-Brazil-Peru triple point will illustrate the problems involved.⁸ In the boundary negotiations in this area each of the three countries has claimed a territorial extent founded chiefly upon its colonial history. Brazil claimed all that sweep of territory embraced in the Portuguese domain in 1821—and, in addition, certain territory that was subsequently occupied by Brazilians. Bolivia's claims were based chiefly upon the extent of the *audiencia* of Charcas, within the limits of the viceroyalty of Buenos Aires. The claims of Peru traced back to Spanish royal decrees and acts relating to the viceroyalty of Lima or Peru.

The territory to which each country asserted claims varied with the passing of time. The maximum claim of each country differed in respect of each of the neighboring countries. The territory in which the claims of two or of three countries overlapped therefore varied greatly from decade to decade. The accompanying map unavoidably presents an oversimplified picture.

Bilateral treaties and an arbitral award, particularly in the period between 1851 and 1909, attempted to fix boundary termini where the two countries concerned supposed they met the

⁸ On the recent history of the controversies concerning the Bolivia-Brazil, Bolivia-Peru, and Brazil-Peru boundaries, in which the fixing of the triple point was quite incidental, see Ganzert, "The Boundary Controversy in the Upper Amazon." Regarding the separate boundaries, see Ireland, *Boundaries, Possessions and Conflicts in South America*, pp. 40-53, 95-109, 123-30. Study of the treaty texts, commission reports, etc., is essential to an understanding of the complicated history of triple points.

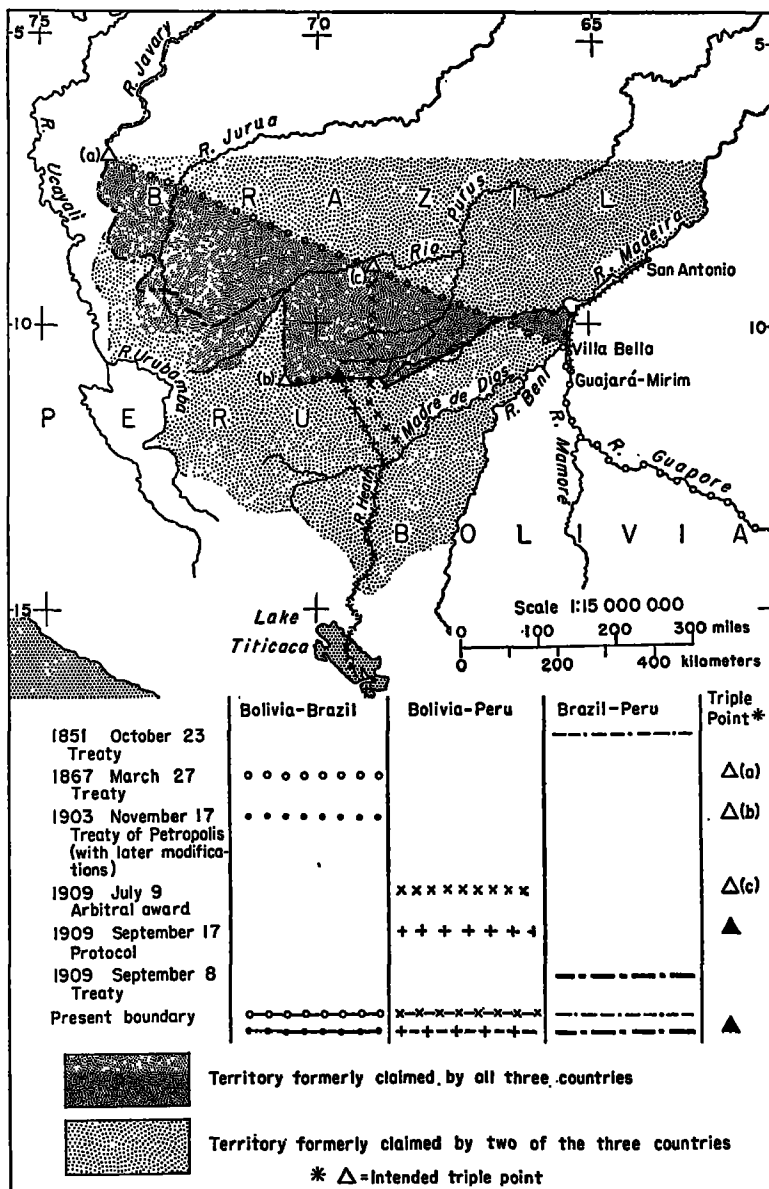


FIG. 12. THE BOLIVIA-BRAZIL-PERU TRIPLE POINT

territory of the third. These hypothetical boundary termini or triple points ranged over a space of fully 400 miles, chiefly within the limits of the present Brazilian *Territorio do Acre*. Lack of geographical knowledge was manifest in frequent alternative treaty provisions. For example, if the source of a specified river were found to be north or south of an indicated parallel of latitude or east or west of a given meridian, then the boundary would follow another stipulated course, if that were practicable. Whenever Bolivia and Brazil attempted to define their boundary all the way to the Peruvian frontier as they did in 1867 and 1903, Peru made diplomatic representations protesting that the territory traversed by the proposed Bolivia-Brazil boundary rightly belonged to Peru. When the Argentine award in the Bolivia-Peru boundary arbitration was rendered, July 9, 1909, Bolivia and Peru were dissatisfied with the line; they followed an unusual and creditable course in agreeing to accept the award and to exchange territories which gave them a mutually acceptable boundary.

To sketch the history of the establishment of the three boundaries until they met at a common point is not relevant. The history is complicated by the penetration of rubber-producing lands at the turn of the century, by Bolivia's desire for a railroad around the cataracts of the Río Madeira in Brazil in order to have an outlet by way of the Amazon, and by other factors. The successive steps by which agreement regarding any one of the three boundaries was reached can not be fully understood, then, without reference to contemporary developments relating to the other two boundaries which ultimately converged with it at a single point. In fact, in order to study the history of any one of these three boundaries, it is necessary to take into consideration, to a certain degree, questions relating to the fixing of the triple points at *both* ends of the boundary.

The overlapping claims in an area in which a triple point will later be fixed may be more involved than has already been intimated. In some instances as many as four countries claimed the same territory. This occurred in the case of Brazil, Colombia,

Ecuador, and Peru.⁷ Between four countries with broadly overlapping territorial claims six different boundaries might be hypothecated; that is, each of the four countries may have a boundary with each of the remaining three. Between four countries situated as these four are (none of them being surrounded, as are Bolivia and Paraguay), there could not possibly be six boundaries. When the controversies have once been disposed of, only five boundaries can remain; any one of the six possible boundaries may have been pinched off. With reference to these four countries, the Brazil-Ecuador boundary has been eliminated, although Brazil and Ecuador negotiated a boundary treaty in 1904 which indicated where their common frontier would lie in the event that the controversy between Ecuador and Peru were to be settled in favor of the former. All of the other five possibilities have now become realities: the Brazil-Colombia, Brazil-Peru, Colombia-Ecuador, Colombia-Peru, and Ecuador-Peru boundaries. The last remains to be delimited.⁸

Argentina-Chile Boundary

The 3,000-mile boundary between Argentina and Chile is one of the longest boundaries in the world. The negotiations and boundary commission operations that finally led to the complete delimitation of this line⁹ are exceptionally complicated, but one outstanding problem in treaty interpretation deserves special consideration.

The question of their common frontier having disturbed their relations for three or four preceding decades, Argentina and Chile undertook to define their entire boundary by a treaty con-

⁷ In North America a similar instance occurred in the "Oregon country," where claims of the United States, Great Britain, Russia, and Spain overlapped widely, until treaties were negotiated with Spain in 1819 and with Russia in 1824 (United States) and 1825 (Great Britain). This restricted the dispute to the United States and Great Britain until it was settled by treaty in 1846.

⁸ For a brief discussion of these six boundary claims see Boggs, "Map of Latin America by Treaty," with maps. For a good geographical study of the region see Platt, "Conflicting Territorial Claims in the Upper Amazon."

⁹ There is pending still (October 1939) a question relating to the sovereignty of three small islands, Pictou, Nueva, and Lennox, near Cape Horn at the easterly entrance to Beagle Channel.

cluded at Buenos Aires, July 23, 1881. The long portion in the Andes, extending over approximately 29 degrees of latitude, was defined very briefly in terms which may be translated as follows:

Art. 1. The boundary between the Argentine Republic and Chile is, from north to south as far as parallel 52 degrees of latitude, the Cordillera of the Andes. The frontier line shall run in that extent along the highest crests of said cordilleras which may divide the waters, and shall pass between the slopes which descend on either side. Any difficulties that might arise on account of the existence of certain valleys formed by the bifurcation of the cordillera, and in which the watershed may not be apparent, shall be settled amicably by two experts, one to be appointed by each party. . . .¹⁰

In the attempt to be explicit, the boundary was thus defined in terms both of the "highest crests" or summits of the mountains and of the "watershed" or divide. Another term was introduced in Article 2 of the same treaty: the boundary to the north of the Straits of Magellan continued from the meridian of 70 degrees west of Greenwich, westward along the parallel of 52 degrees south latitude "as far as the *divortium aquarum* of the Andes," where it should join the highest crests of the mountains, or the watershed, as defined in Article 1.

A protocol of 1893 represented an attempt to clarify doubts that had arisen in connection with laying down the boundary, but it did not dispel the ambiguity of the 1881 treaty.

By the Argentine-Chilean accord (*acuerdo*) of April 17, 1896, the boundary was to extend in the cordillera of the Andes as far

¹⁰ The Spanish text reads as follows:

"Artículo 1º. El límite entre la República Argentina y Chile es, de Norte á Sur hasta el paralelo 52 de latitud, la cordillera de los Andes. La línea fronteriza correrá en esa extensión por las cumbres más elevadas de dichas cordilleras que dividan las aguas y pasará por entre las vertientes que se desprenden á un lado y otro. Las dificultades que pudieran suscitarse por la existencia de ciertos valles formados por la bifurcación de la Cordillera y en que no sea clara la línea divisoria de las aguas, serán resueltas amistosamente por dos peritos nombrados uno de cada parte. . . ." Arg. Rep., *Tratados*, Vol. 7, pp. 118-19.

English translations appeared in official American and British publications, and others were made by the foreign offices of Argentina and Chile; the differences between them were regarded as of some importance. For these four English translations in parallel columns, with footnotes, see the table facing p. iv in Lamarca, *Boundary Agreements*.

north as 23 degrees south latitude in conformity with the treaty of 1881, and Bolivia was to be invited to participate in establishing the northern portion of the frontier. Article 2 of the 1896 accord provided that disagreements between the experts in fixing the boundary to the south of $26^{\circ} 52' 45''$ were to be submitted to arbitration by Her Britannic Majesty's government after previous examination on the spot by a commission to be named by the arbitrator. In 1898 Queen Victoria agreed to serve as arbitrator.

Various boundary commissions were engaged in surveying and mapping and in establishing portions of the boundary in the years subsequent to 1881.¹¹ The establishment of the triple point common to the frontiers of Argentina, Bolivia, and Chile should receive mention because Bolivia's boundary with Argentina had been previously defined in at least general terms. The northern section of the boundary from the Bolivian frontier (the triple point being fixed on Cerro Zapaleri, actually slightly to the north of 23 degrees) southward to $26^{\circ} 52' 45''$ was fixed by a "demarcation commission" of three, comprising two appointees of Argentina and Chile, with the American minister to Argentina, William I. Buchanan, as the neutral member. Their decision was rendered March 24, 1899—a compromise line in seven sections, mostly straight lines.

By direct negotiation Argentina and Chile also agreed upon four sections of the Andes line farther south. The Argentine and Chilean experts were unable to agree, however, regarding four sections of the Andes boundary, aggregating about 900 miles, and also regarding parts of the boundary near the Straits of Magellan. With the exception of a very small area near 27 degrees latitude, these disagreements embraced the larger portion of the boundary south of 40 degrees. These problems were studied on the ground by a British commission appointed to attempt to fit the pattern of the treaties to the topography of the Andes.}}

¹¹ The principal commissions are mentioned in Ireland, *Boundaries, Possessions and Conflicts in South America*, pp. 17-27. For detailed information, see Arg. Rep., *La Frontera Argentino-Chilena*.

In 1881 neither Argentina nor Chile could possibly have indicated on a map the boundary to which it believed it was entitled by the treaty, with precision sufficient to enable a commission of surveyors to identify the boundary line on the ground. When the difficulties of applying the treaty terminology to the Andes are considered, however, it is rather remarkable that direct agreement was reached regarding such a large part of this exceptionally long boundary, as may be seen by examining Figure 13.

The problems submitted to arbitration had their origin solely in the ambiguity of treaty terminology. Where the *divortium aquarum* or watershed does not coincide with the line of the highest crests or summits of the mountains, which term takes precedence? It had been found that in the southern or Patagonian Andes the rivers flowing westward into the Pacific drain considerable areas to the east of the main cordillera. Naturally, therefore, in the controversy that ensued, Argentina claimed the line of the highest crests of the Andes, while Chile claimed the watershed line. In all such cases each country feels bound to maintain, in effect, that the only possible interpretation of the treaty is that which will place the boundary where it gives that country the largest or the most valuable territory; the implication is that the other country has already agreed to the terms of a treaty which clearly concedes all that it claims for itself. Such, of course, is the almost invariable interpretation of all sorts of agreements and contracts, whether between nations or individuals. The importance of precise boundary delimitation in the words of treaties, arbitral awards, and commission reports is therefore apparent. The concepts of the highest mountain crests and of the watershed were, however, found irreconcilable and, prior to the submission of the problems to arbitration, the two countries had girded themselves for possible conflict, on land and sea, at considerable expense to the taxpayers.

The difficulties of clearly defining the boundary may better be appreciated when the geography of the country is understood. The southern Andes, within which the disputed areas chiefly lay,

are thus described by Isaiah Bowman in his *Desert Trails of Atacama* (page 255):

Northward from the southern tip of South America the Andes Mountains are compressed within a rather narrow zone, and in a single airplane view their entire extent from Chile to Argentina could be seen on a clear day. The several chains would be seen to lie so closely parallel and with such narrow longitudinal valleys between them as to have in general a rather simple appearance. One would also see the streams that drain the Argentine plain north of Patagonia extending their headwaters effectively throughout the mountain country, for the most part to the very summits and crests of the main divide. In the same way the streams running westward to the Pacific interfinger with companion streams on the other side of the cordillera. Every mountain hollow is reached by tiny head-water tributaries. It is effective through-flowing drainage of the normal type. . . .

When the controversy was presented to the British arbitrator, Chile contended that among all the "highest summits of the Cordilleras" only those "which divide the waters" should be included in the boundary; Argentina claimed that among all the "crests that may divide the waters" only the "most elevated" were to be selected. Other differences related to the terms "cordillera" and "cordilleras" as used in the treaties. Chile maintained that the term should be considered in a technical sense to include every feature whereby the cordilleran frontier is defined, while Argentina upheld the theory that the "principal range" is the boundary range intended. The interpretation of the Spanish clause "entre las vertientes que se desprenden a un lado i a otro" ¹² also was disputed.

The evidence submitted by the two countries for the use of the British arbitrator was unusually full and well organized. The histories of boundaries in Europe and elsewhere were analyzed for their bearing on "mountain crests," "watersheds," and other aspects of the boundary questions, and the literature is valuable

¹² Chile, *Statement* . . . , Vol. 2, p. 639. See also Hinks, "Notes on the technique of boundary delimitation," pp. 425-28.

and interesting in these numerous citations. The following remarks of Colonel Sir Thomas Hungerford Holdich,¹³ a member of the tribunal commission with wide experience in boundary-making in the Old World, are pertinent when the terminology of boundary treaties is under consideration:

Eminent geographers on either side argued the question with much earnestness and ability, and only proved how possible it was to interpret the provisions of both treaty and protocol in absolutely divergent senses, and with vastly different results.

Then at last the exploration of the country in question (the Patagonian Andes) was taken up in right good earnest, and surveys were carried through . . . which revealed at once the futility of dealing with the infinite variety of nature's dispositions as the geographical basis of a political agreement until those dispositions were known. Politicians, lawyers and even geographers, to a certain extent, lost sight of the fact that there is hardly a geographical term expressing a natural feature that will always, and under all conditions, bear one unalterable interpretation. Not even a "river," a "mountain," a "coast line" or that somewhat illusive geographical entity the "*divortium aquarum*" is always and everywhere to be unmistakably recognized. . . .¹⁴

The award of King Edward VII, who had succeeded Queen Victoria, was rendered on November 20, 1902.¹⁵ In general, the award line followed a compromise course along the ranges of the Andes. It has been estimated that, of the areas that had been in dispute, the award gave to Argentina 15,450 square miles, and to Chile 20,850 square miles.¹⁶

In general terms the King's Award assigns to Argentina the Lake Lacar depression, the valleys of Foyel, Nuevo, Cholila, Percey, 16th October, Corcovado, and the Upper Pico, all north of 44° 30'; and to Chile the valley of the Frias, all the Aysen basin except a few leagues

¹³ With reference to Holdich's work on the Argentine-Chilean boundary see the *Geog. Jour.*, Vol. 75 (March, 1930), pp. 215-17.

¹⁴ Holdich, *Countries of the King's Award*, p. 2.

¹⁵ British and Foreign State Papers, Vol. 95, pp. 162-63; the report, which was submitted by the tribunal with supporting maps, provided a detailed definition of the boundary.

¹⁶ Ireland, *Boundaries, Possessions and Conflicts in South America*, p. 26.

at the head of the Simpson, the Tamango and the whole of the Maravilla and Toro basins of the Ultima Esperanza district in Magallanes territory, except the upper Viscachas. It divides two not unimportant valleys—the Jeinemeni and the Meyer—between the two states. . . .¹⁷

Prior to the submission of the boundary question to arbitration, Argentina and Chile were equipping themselves for possible conflict, and each was confident of success. Fortunately, an eleventh-hour decision submitted the problem to impartial arbitration the results of which were on the whole eminently satisfactory. A great monument, known as the Christ of the Andes, was erected on the boundary, beside the road in Uspallata Pass, largely upon the initiative of women of these two countries (see photograph, Plate VII, facing page 196).

CONCLUSION

The problems of boundary-making, varying from continent to continent, are nowhere simple. In the consideration of South American boundaries, the problems which are somewhat peculiar to that continent have been discussed, but the specific questions of triple points and multiple overlapping claims and those relating to the Argentina-Chile boundary illustrate the problems of establishing boundaries anywhere in a new continent.

The difficulties of reaching agreement as to where the boundaries were to be placed, it will be admitted, have been considerable. Taking into account the number of boundaries, the breadth of overlapping of the claims, and the inconclusiveness of some of the historical antecedents, the strife over these perplexing boundary questions has been very moderate. The number of disputes that have been settled by reference to arbitration is correspondingly large.

The functions of South American boundaries are comparatively simple because there are only two official languages in the ten republics and because of relatively low population density and of the absence of marked contrasts between industrialized

¹⁷ Holdich, *Countries of the King's Award*, pp. 277-78.

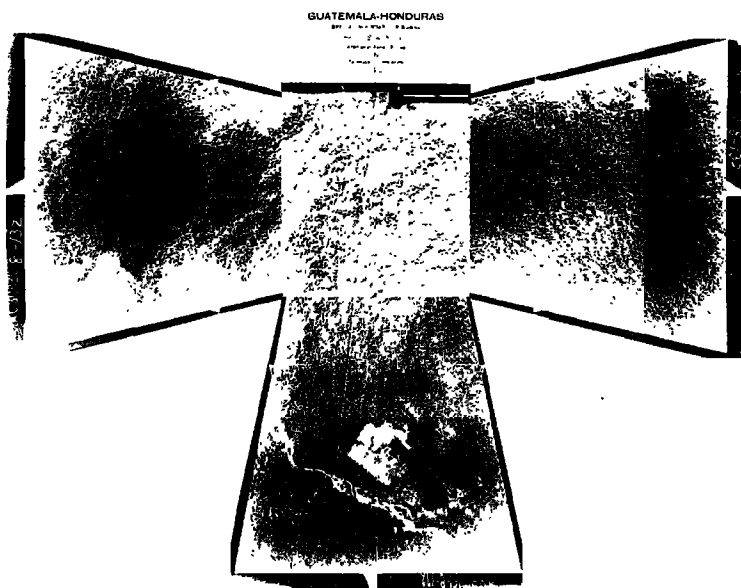


PLATE III. SOUTH AMERICAN AND CENTRAL AMERICAN BOUNDARIES

Above: The "Piedra del Cocuy" on the Brazil-Venezuela boundary, near the triple point with Colombia. *Photograph from the Venezuelan Ministry of Foreign Relations.* *Below:* Guatemala-Honduras boundary. Aerial photograph, made with a four-lens camera, in 1935, showing a boundary vista, from the Rio Morjá (on the lower wing picture) toward the Rio Managuá, after the boundary had been demarcated. This is one of the Central American boundaries on which aerial photographic mapping has been effectively and economically employed. *Photograph from the Comisión Técnica de Demarcación.*

and agricultural areas in boundary regions. Moreover, since the boundaries have been established antecedent to white settlement in almost all of South America, in so far as the boundaries are well placed in relation to all geographical factors there should be little friction over boundaries in the future.

Chapter VI

EUROPEAN BOUNDARIES AND THEIR FUNCTIONS

EUROPE, which is commonly regarded as a continent in spite of its broad attachment to Asia, was a new and relatively unoccupied world into which successive waves of Asiatic peoples migrated over a period of many centuries. With its numerous population movements, its minglings and displacements of peoples, its expanding, contracting, and disappearing empires and kingdoms, the pattern of nationalities which Europe presents to-day is more complex than that of any other continent.

Partly because of this multiplicity of nationalities, the boundaries of Europe divide it into smaller national units than do the boundaries in any other continent. As already observed, for every 1,000 square miles of area there are on the average at least 4 miles of international boundaries in Europe or at least fifty percent more than in South America, the continent ranking second, and more than three times the 1.3 miles of boundary in North America (including Central America). Excluding the Soviet Union's part of Europe (more than half), the boundaries of western and central Europe measure the surprising length of 7.3 miles per 1,000 square miles of area. If we consider boundaries in relation to population density, the interruptive effect of European boundaries compared with those of other continents, as it will be recalled, is very much greater still.

Boundary treaties nowadays stipulate that the boundary which is fixed on the surface of the earth extends vertically downward indefinitely into the earth and vertically upward indefinitely into the air. Prior to the building of great tunnels, the development

of extensive mining operations, and, more recently, the establishment of international and intercontinental air routes, such treaty provisions had little more than abstract meaning. Today they add very materially to boundary restrictions and complications.

The precision of detail with which boundaries are delimited and demarcated is sometimes surprising. The fixing of the boundary on the railroad through the Somport tunnel in the Pyrenees precisely within one centimeter, computed both as to the horizontal component and the actual measurement along the slope on the tunnel and separately for the two walls of the tunnel, is the sole subject of a convention between France and Spain.¹ The boundary in the tunnel is directly beneath the boundary line on the surface of the ground. The railway between Cuneo and Ventimiglia, both in Italy, passes through France for a short distance, the principal station in France being Breil. Minor rectifications of the boundary where the railroad enters and leaves French territory were provided for by a convention between France and Italy.² On the northern frontier two areas, each measuring 126 square meters, which are defined as being "without any value," were exchanged; the southern frontier rectification merely cleared up an ambiguity, "since the former bed of the Riou brook can not be accurately traced under the viaduct."

All this is merely physical and quantitative. The combination of the quantitative and the qualitative factors, however, is significant. The boundary mesh of the eastern seaboard of the United States is much finer than it is farther west, but the small size of his state makes little difference to the citizen of Rhode Island or Delaware, since he may freely come and go, buy and sell, and use the same money and the same language, across state lines from coast to coast.

What happens at an international boundary in Europe, and

¹ Convention for the Delimitation of the Frontier between Spain and France inside the Somport Tunnel, signed at Paris, June 12, 1928, League of Nations *Treaty Ser.*, No. 3131, Vol. 136, pp. 290-93.

² Convention signed at Paris, July 8, 1930, League of Nations *Treaty Ser.*, No. 3148, Vol. 137, pp. 106-10; with diagrams.

what difference does it make whether or not there is a boundary at a given place? The answer to these questions would reveal how the boundaries actually work and what their significance is.

Boundary incidents might be cited as a partial answer to these questions. They are instances of friction, perhaps caused by impetuous action of an individual, sometimes arousing local antagonisms of such proportions that they occasion protracted diplomatic negotiation or reference to an international commission or to arbitration. They are an evidence of failure to function, rather than an index of the normal functioning of boundaries. Along many frontiers instances of serious friction are extremely rare.

To record the experiences and impressions of a competent observer who has crossed many boundaries would be interesting and enlightening. The personal equation involved would be great, however, and the results might not be satisfactory as a means of studying boundary functions.

On the other hand, the countries of Europe have been confronted with so many boundary problems for so long a time that they have found it necessary to regulate with the utmost detail the comings and goings of peoples, the rights of pasturage, hunting, and fishing, the movements of goods across boundaries, and almost all conceivable activities. These regulations are the subject of treaties and other international acts, and they apply to entire boundaries or to specified portions of them. They afford a convenient means of ascertaining what the countries themselves have come to regard as the normal functions of their common frontiers. The provisions of these arrangements are reasonable, when all factors are considered, especially the factors of population density and the number and extent of boundaries in Europe. To Americans, however, the restrictions seem surprisingly multitudinous and needlessly hampering. To recite the provisions of a number of these international agreements will enable the reader to obtain a good idea of the manner in which European boundaries have been functioning in recent years.

BOUNDARY RESTRICTIONS UPON ADJACENT
LOCAL POPULATIONS

The people who live nearest to a boundary are affected to an exceptional degree. They have many friends and relatives just across the line. In some parts of Europe where recent boundary displacements have occurred, the disruption of local affairs is difficult to imagine. A new boundary may cut a farm in two, and the farmer may have to cross the frontier daily to cultivate his fields and harvest his crops, subject to detailed regulations between the two countries concerned. Elsewhere a boundary may interrupt well-established practices in the pasturage of livestock in summer alpine pastures. It is evident, therefore, that the zonal character of the boundary can not be abolished by fiat.

Pasturage

In various parts of Europe, well-established practices govern the summer pasturing of livestock in mountain pastures, sometimes many miles from their winter homes. A few herdsmen may drive all the flocks of a commune to the summer feeding grounds, the profits and losses being shared with those who remain behind to till the fields. Boundaries sometimes disrupt these traditional rights unless provision is made for their continuance. Examples might be cited from the Tatra Mountains, where rights said to antedate the partition of Poland in the eighteenth century are retained.³

The workings of European boundaries and the recency of development of some of their attributes may be observed in northern Scandinavia. The wide ice fields of the Scandinavian Alps were long an unpeopled waste before the northern portion of the Norway-Sweden boundary was drawn upon them. This broad desolate zone, separated from areas of continuous habitation, was the natural partition between Norwegians and Swedes

³ Bowman, *The New World*, p. 387, refers to the valuable summer pastures along the present boundary between Bulgaria and Greece, to which several hundred thousand head of livestock, chiefly sheep, were driven annually from the plains to the south, and adds "The new boundary breaks up this movement."

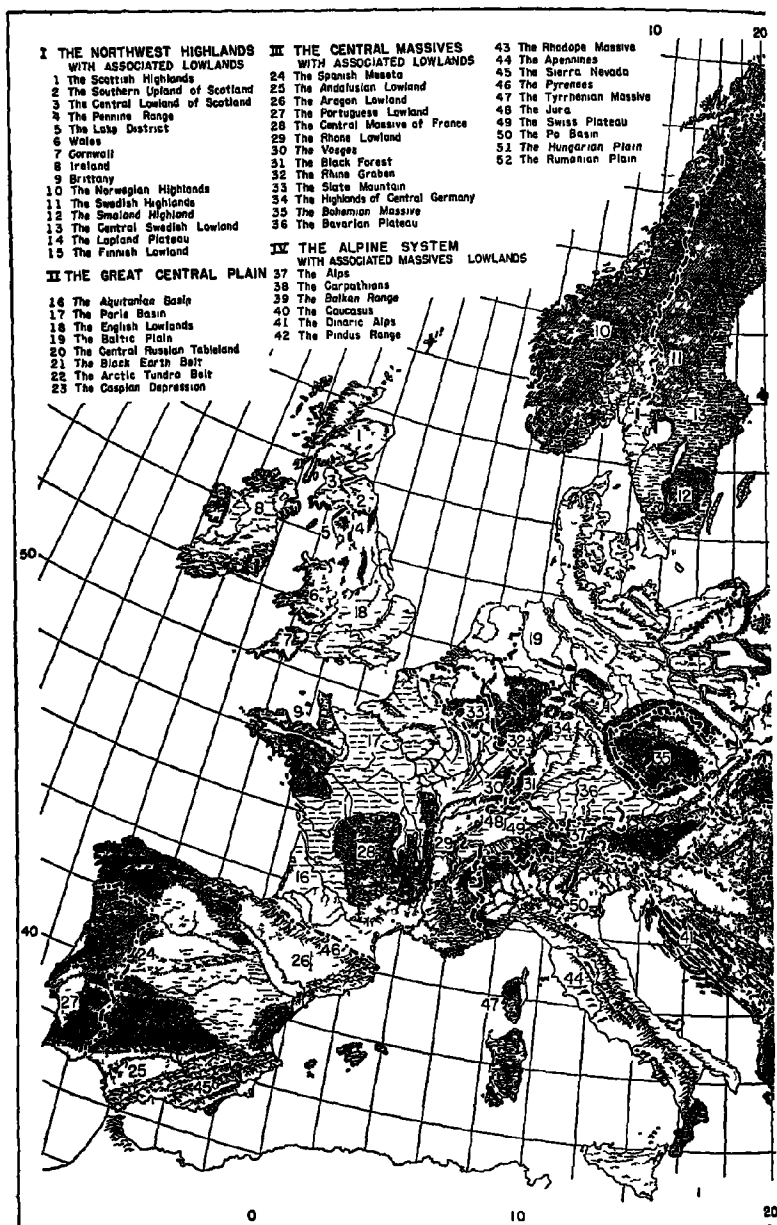
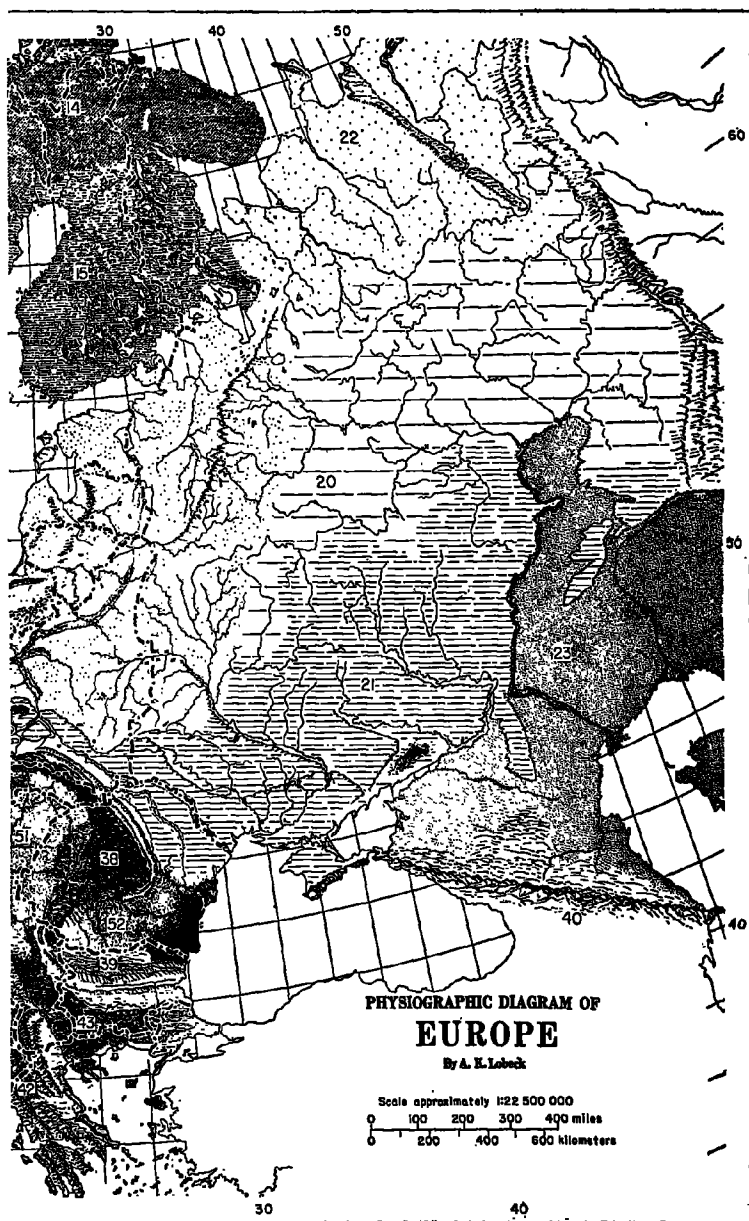


FIG. 14. EUROPE



INTERNATIONAL BOUNDARIES IN 1937

for centuries, and the region north of Trondheim was regarded as a common district as recently as the last century. In the far north a few nomadic Lapps wandered at will over territory belonging to Norway, Sweden, and Russia and sometimes taxed by all three countries. This desert common district was parceled out between Norway (or Denmark) and Sweden in 1751 and between Norway and Russia in 1826.⁴

The meager pasturage for reindeer necessitates migration in summer to distant prairies and snow fields, and the long-established routes cross modern international boundaries. The reindeer provide food and clothing for the Lapps and for populations farther south; dried reindeer meat is an element in the famous Swedish *smörgåsbord*.⁵

These nomadic Lapps and their reindeer are now the subject of treaty provisions relating to all four international boundaries⁶—those of Finland with its three neighbors, Norway, Sweden, and the Soviet Union, and the Norway-Sweden boundary. Along certain portions of these boundaries reindeer fences have recently been erected, and for purposes of the reindeer treaties the fences usually serve as the international boundary even where they depart from the territorial sovereignty line for topographic and economic reasons.

By convention in 1925 between Finland and Sweden, the Lapps of Sweden may move their reindeer herds across Finnish territory en route to the province of Troms, Norway, along specified tracks which are staked out and which have a normal width of three kilometers. Sweden makes an annual payment to Finland for expenses incurred. Dogs along the route in Finland must be kept fastened while movement of herds is in progress.

The Finland-Norway convention of 1935 permits Norwegian

⁴ Norway, Official Publication for the Paris Exhibition, 1900, quoted by Semple, "Geographical Boundaries," pp. 393-94.

⁵ Bernatzik, *Lappland*.

⁶ Finland-Norway convention of Nov. 5, 1935, League of Nations *Treaty Ser.*, Vol. 169, pp. 57-77; Finland-Sweden convention of May 9, 1925, League of Nations *Treaty Ser.*, No. 1136, Vol. 47, pp. 284-317; Finland-USSR convention of July 4, 1933, League of Nations *Treaty Ser.*, Vol. 149, pp. 113-29; Norway-Sweden convention of April 8, 1913, British and Foreign State Paper, Vol. 107, pp. 1068-70.

Lapps migrating with their reindeer to cross Finnish territory at specified times and places, but the reindeer must not be allowed to graze in Finland.

Norway, in a treaty with Sweden, grants to Swedish Lapps special grazing rights in a long strip to the south of 70 degrees latitude, adjacent to the boundary.⁷

Finland and Soviet Russia in 1933 agreed regarding notification of trespassing reindeer and their reciprocal return. Grazing fees are fixed for periods when reindeer are in the territory of the other country. Reindeer fences and traps are provided for in the agreement. Special provisions apply in the frontier north of Korvantunturi on account of the exceptional natural conditions.

Local Boundary Regimes and "Minor Frontier Traffic"

The role of international boundaries as it affects the people who live within a few miles of the frontier is partially revealed in administrative regulations and in treaties and conventions regulating what is sometimes called "minor frontier traffic." It will be observed that they follow a common pattern of ideas and restrictions. In the instances cited below are a few of the typical stipulations, which afford a glimpse of the limitations imposed upon many thousands of people, many of them living in territory crossed by no boundary until after the World War.

Hungarian-Yugoslav boundary. Hungary and Yugoslavia negotiated a treaty of commerce in 1926,⁸ Article 1 of which reads in part as follows: "There shall be full and complete freedom of commerce between the Kingdom of Hungary and the Kingdom of the Serbs, Croats and Slovenes. . . ." By the terms of that treaty, special privileges are granted to frontier traffic, in which frontier zones 10 to 15 kilometers wide, generally following administrative boundaries, are established on both sides of the boundary. Inhabitants of the zone may bring across the boundary certain goods obtained within the frontier zone of the other

⁷ See map in Bowman, *The New World*, p. 253.

⁸ Treaty of commerce, with final protocol and additional protocol, signed at Belgrade, July 24, 1926, and a second additional protocol, signed Nov. 19, 1928, League of Nations *Treaty Ser.*, No. 2222, Vol. 97, pp. 103-63.

country, sufficient to meet ordinary daily needs, free of customs duties and all import and export charges. A few of the articles and products enumerated are: fresh milk and curdled milk, firewood, peat, peat charcoal, ground ashes, natural fertilizers, and specified quantities of flour, bread and pastry, butter and cheese, meat and fresh fish, "live and slaughtered poultry, namely: 4 hens, 4 ducks, 1 goose, 1 turkey, 50 eggs."

Livestock driven across the boundary for pasturage in the adjacent frontier zone may be admitted free of duty on condition that they are returned within a previously fixed period. Exemption of duties extends to the young born while the animals are pastured in the other territory, and to the products of the pastured animals, computed on a daily average, including butter, 1.16 kilograms per cow, 0.032 kilograms per goat; and cheese, 0.29 kilograms per cow, 0.058 kilograms per goat; 0.029 kilograms per sheep. (See Appendix C.) Agricultural produce must be transported into the zone of habitual residence by March 31 of the following working year; wine, by November 30 of the harvest year. Implements must be brought back by December 31 of each working year.

German-Polish boundary. The agreement of 1931 between Germany and Poland concerning the granting of facilities in minor frontier traffic⁹ fixed a "frontier zone" ten kilometers wide in the territory of each, together with the outlying portions of communes intersected by the ten-kilometer lines. Persons over fifteen years of age living in the zone could obtain a frontier permit (*Grenzausweis* or *przepustka graniczna*) which was valid for one year, for one reichsmark or two zlotys. Each frontier permit enabled the holder to cross the frontier at the places stated in the permit, within the stipulated daylight hours (varying with the season) during which the barriers were to be open. Permission to cross the frontier at other points could be granted for purposes of agriculture or forestry, hunting or fishing, grazing, reed or peat cutting, and other activities meriting special consideration.

⁹ Agreement signed at Warsaw, Dec. 22, 1931, League of Nations *Treaty Ser.*, No. 3329, Vol. 144, pp. 224-55 (English and French translations). A model of a frontier permit is shown on pp. 214-17 and, in translation, on pp. 246-49.

Holders of permits might reside within the frontier zone of the other state for a maximum of six days on each occasion. Ministers of religion and their assistants, doctors, midwives, and veterinary surgeons, in the exercise of their profession, were permitted to cross the frontier at hours other than those specified.

Farmers whose land was cut by the boundary were allowed under stipulated conditions to convey across the frontier free of duty specified articles, products, and animals for normal exploitation, including: fertilizers, seeds, grain, natural stones, tiles, sand, loam, clay, and peat; implements, vehicles, draught animals, harness, fodder, and fuel for the machines; game killed on the land and fish and crayfish if fresh and unpacked; and livestock taken across the frontier for grazing, including poultry and hives of bees. Draught animals and their harnesses were to be brought back when the work was completed.

Inhabitants of the frontier zone might import free of duty into the adjacent zone personal provisions, such as food for one day, not exceeding two kilograms in weight; this did not include alcoholic beverages or artificial sweetening substances such as saccharine. They could take enough cigars, cigarettes, and tobacco for one smoker for one day, and one box of matches. Customs exemption was granted to inhabitants of the frontier zone in respect to coffins containing corpses, urns containing ashes of cremated bodies, and wreaths and articles used for the upkeep or ornamentation of tombs.

Members of fire brigades, mine salvage corps, and other rescue organizations were permitted to cross the frontier, for their respective purposes, at any point and at any hour without passport or frontier permit.

Finnish-Norwegian boundary. Norwegian and Finnish travelers are entitled to make use of the waters of the Pasvik (Patsjoki) and the Jakobselv (Vuoremajoki) in the territory of both countries, so far as is necessary for their journey.¹⁰ This, of course, is in the sparsely populated far north above the Arctic Circle. No

¹⁰ Convention between Finland and Norway concerning the passage of travelers over the Pasvik and the Jakobselv, signed April 28, 1924, League of Nations *Treaty Ser.*, No. 757, Vol. 30, pp. 46-48.

fires may be lighted by a national of one state in the territory of the other state. Travelers are generally exempt from customs inspections. People dwelling on the shores of these rivers in one state may cross into the other state in the neighborhood of the frontier without being subject to unnecessary formalities.

In the treaty of commerce between Finland and Norway signed November 11, 1930, the complexity of the boundary regime is indicated by the fact that Article 6, relating to the simplification of customs formalities, cites (as published) twelve preceding documents. Similarly, Article 10, regarding traffic in transit, provides for the application of the convention and statute on freedom of transit signed at Barcelona in 1921, and a footnote cites fourteen preceding documents.¹¹

Finnish nationals in the far northern district of Petsamo, above the Arctic Circle, are allowed to sell their ordinary agricultural products at all public fairs in the provinces of Troms and Finnmark in northern Norway. A "Nordic" travel card or identity card is used by Finns and Norwegians who inhabit the frontier districts.¹²

Czechoslovak-Polish boundary. Another example of the effect of boundaries may be found in connection with certain changes in the boundary between Czechoslovakia and Poland, which were effected by exchange of notes on September 30 and October 1, 1938, and by subsequent protocols. In general the boundaries were made to follow local property lines of peasant communities. Typical details are these: Water for the town of Frydek in Czechoslovakia was furnished by a pressure tank in territory that became Polish; waterworks employees from Frydek were allowed entry to the waterworks on the basis of *laissez passer*; the town of Frydek permitted the Polish occupant of a forest at Praszyw to draw water from the pressure tank by hand. The small wooden church on the hill at Praszyw was cut off from the parish Morawka by the new boundary, and the Polish government agreed to move it to Czech territory within a year; until

¹¹ Treaty of commerce between Finland and Norway, Nov. 11, 1930, League of Nations *Treaty Ser.*, No. 2980, Vol. 130, pp. 19-31.

¹² Convention of April 28, 1924.

then, people of the parish could cross the boundary to attend church, on the basis of the agreement on frontier facilities. Bargemen from villages in Slovak territory were given the right to bring tourists over the Dunajec rapids to Szczawnica to the same extent as bargemen from Polish villages.

Fishing

The regulation of fishing in boundary rivers and other waters is provided by various treaties and other international acts. For example, the convention negotiated by Czechoslovakia and Hungary in 1928 relating to the settlement of questions arising from the delimitation of their frontier¹³ closely regulated fishing in boundary rivers and streams. Former Hungarian fishing companies were divided into two companies, one for each side. To general meetings of one group, the chairmen of fishing companies on the opposite bank were to be invited. The fixing of the general closed season in a uniform manner was provided for. Persons fishing in frontier waters were required to have permits entitling them to cross the boundary. Minimum dimensions of fish were prescribed; crayfish must measure at least eight centimeters from eye to end of outstretched tail.

The proliferation of the detail of boundary regimes is further illustrated in the agreement¹⁴ concerning the fixing of a uniform general closed season for fishing and the conditions for the authorization of night fishing in the boundary rivers and streams. Night fishing is permitted only to a professional fisherman of trustworthy character living within a riparian commune. During night fishing the use of a bright light to dazzle the fish is prohibited. Permission to fish at night shall be granted only very exceptionally, and within a certain season. A fisherman who has permission to fish at night must notify the appropriate officials in advance whenever he intends to fish; to fish in the Danube at night he must also advise the navigation authority as to the exact

¹³ Convention signed at Prague, Nov. 14, 1928, League of Nations *Treaty Ser.*, No. 2574, Vol. 110, pp. 426-93.

¹⁴ Agreement between Czechoslovakia and Hungary signed June 8, 1934, League of Nations *Treaty Ser.*, No. 3979, Vol. 172, pp. 62-67.

hour and length of time, place of fishing, number of persons to be engaged, and kind of craft and tackle to be employed.

GENERAL RESTRICTIONS UPON THE MOVEMENTS OF PEOPLE

Prior to 1914, passports were not generally required in going from one country to another either in the Americas or in Europe. Their use is now the rule rather than the exception. Adaptation to the restrictions upon travel is indicated in the statement that the value of passports "is recognized as establishing identity and the right to travel."¹⁵

As exceptions to the rule that passports are required in crossing international boundaries, the following may be noted: Belgium, France, the Netherlands, Luxemburg, and Monaco do not require passports between one another, although persons crossing the frontiers must carry identity documents stating their nationality and bearing a recent photograph.¹⁶ Swiss tourists in France, Belgium, and Luxemburg are allowed to enter and stay up to two months in those countries on producing a motorist's driving license or even a passport which expired less than five years previously, as means of identification.¹⁷ An agreement was reached in 1929 between the Scandinavian countries whereby nationals of Norway, Sweden, Denmark, Finland, and Iceland are not required to produce passports but may use for identification the Scandinavian or "Nordic" travel card. In many cases visa fees have been reduced or abolished, and in other cases visas are not required.

The general practice in Europe of requiring a stranger to produce evidence of his right to be where he is (for example, by means of police surveillance or the demand for passports upon registration at a hotel) and the special regimes affecting the local populations adjacent to the frontiers all operate to restrict the movements of people and serve to make them acutely boundary-conscious.

¹⁵ League of Nations Document No. C.320.M.119.1926.VIII, p. 7.

¹⁶ *Ibid.*, No. C.356.M.241.1937-VIII, p. 11.

¹⁷ *Ibid.*, p. 63.

RESTRICTIONS UPON THE MOVEMENT OF
GOODS ACROSS BOUNDARIES

The general postwar economic condition of Europe and the establishment of new countries which needed to organize and function as modern national entities gave rise to the adoption of a long series of measures (supposedly for national protection) that have partially paralyzed trade and commerce. The tourist is keenly aware of the restrictions relating to the declaration of all important purchases and to lesser matters such as amounts of chocolate, tobacco, matches, the gasoline in his automobile fuel tank, and the prohibitions on export of currency.¹⁸

The businessman in European countries is hampered by restrictions in import quotas, by the requirement for permission to export, by the reports that must be made to government officials, and by other manifestations of economic nationalism which impede the free movement of goods across the continent in accordance with economic laws.

In addition to tariff duties, which are so high the world over as to choke off a large proportion of normal commerce, administrative measures adopted by many countries

are more comprehensive than the visible tariff, since they affect goods which are on the free list as well as those which are dutiable; they are more effective, since they make use of quotas and embargoes as well as tariff duties; they can be put into operation more promptly, since they do not need to wait upon discussion in legislative assembly. . . .

Everywhere the world over since 1914, administrative measures have been attaining greater importance in the control of foreign trade. So great has been this change that rates of duty in certain foreign countries have ceased to have much significance when contrasted with the new invisible tariff barriers, the import quotas, ex-

¹⁸ The League of Nations *World Economic Survey*, contains the following unusual instance: "The restrictions on imports have sometimes had curious results. Eight farmers whose land lay along the frontier between Germany and the Netherlands taught their hens to smuggle unlaid eggs. The hens were fed on the cheaper grains in Dutch territory; but the nests were placed and the eggs laid in Germany. The Customs officials [in Germany] estimated that two million eggs were thus smuggled across the frontier without paying duty. The farmers received five months' imprisonment. *News-Chronicle*, London, December 16th, 1935."

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change controls, clearing and compensation agreements and barter deals. . . .¹⁰

International trade is normally conducted not by nations but by private corporations and individuals. Its volume and the benefits that flow from it depend in large measure upon the character of the governmental regulation applied to it. Prewar regulation was comparatively slight; currencies were relatively stable and were simpler, partly because in at least half a dozen countries, including France, Italy, and Spain, the national monetary units—franc, lira, peseta, and so forth—were maintained on a par with one another.

EFFECTS OF THE BOUNDARY RESTRICTIONS

The present role of European boundaries may be more clearly comprehended if viewed in perspective, against the background of gradual expansion of authority until the national boundaries of today were reached.

As the central authority of national government has become more and more effective within the last century by inventions affecting communication and transportation, the transformation from local insecurity to security has made its visible impress upon the cultural landscape in Europe. Towns and agricultural agglomerations have sometimes moved from sites chosen for defensibility to sites more desirable for other reasons.

In countries which were settled in eras of insecurity, defense points have now been to some degree abandoned in favor of more convenient sites. Crowded hills are deserted for open plain, as at Les Baux in Provence. Or hill villages expand downhill, but retain their ancient centers on the defense point; Spain supplies numerous examples of this shifting. . . . Sicilian villages which formerly hugged the coast and its protecting waters are pushing tentacles of farmsteads into the rolling, open uplands, now that the Mafia has been deprived of its threat to life and property. Where artificial defenses were formerly maintained, moated granges and villages free themselves for expansion by filling their encircling waters with their encircling walls. Where the agricultural system cogently favors scat-

¹⁰ Bidwell, "Our Invisible Tariff," pp. 775-76.



PLATE IV. EUROPEAN BOUNDARIES

Above, left: Boundary monument at Basel, on the boundary of Switzerland with Germany (Deutschland) in 1900, now with France (indicated by painted letter "F"). Photograph by Erwin Griswold. Right: Boundary stone between houses, at Kamitz, Silesia, and Weisswasser, Austria, on Prussia-Austria boundary established about 1742, and on German-Czechoslovak boundary until 1938. Photograph by Richard Hartshorne. Below: Minehead near former German-Polish boundary in Upper Silesia; Polish workers showing passes to German guard before entering mine. Photograph by Richard Hartshorne.

tered habitations, isolated farmsteads appear, concomitantly with security.

Urban centers are precluded by their function from dispersing in the way farm villages do, but they may and do spread out. Security not only permits them to occupy more space, but it stimulates both trade and manufacturing, their two chief reasons for existing. . . .

Trade follows security, and trade has forced walled seaports to burst their bonds. All of La Rochelle but its port lies on land which was outside the walls in the 17th century. . . . The easily defended *calanque* which has fixed the Rhone Valley seaport of Marseilles for at least 2,800 years has been turned over to the fishing fleet, and a new commercial port filched from the open Mediterranean by jetties. London, Antwerp, Rotterdam, Hamburg, and many another estuary city has dug a new harbor in soft alluvium adjacent to but below the ancient constricted port. To obtain space for new business nearly every commercial city in continental Europe, and the larger ones in Japan, have converted their moated walls into boulevards. Paris and Vienna are the most famous examples. . . .²⁰

The increase of effective central authority in each nation-state and the consequent establishment of internal security have not brought a parallel increase of either authority or coöperation across frontiers. Security stops at the international boundary. The frontier becomes a modern stockade which stamps a new pattern upon the cultural landscape—a pattern not less effective, though less conspicuous, than that of the early stockade.

Most of the boundaries in Europe are invisible throughout their courses except for inconspicuous boundary marks placed at short intervals; across roads there are gates or bars and at intervals there are customs stations and police. Fences are few, and wild animals may cross frontiers without encountering obstacles or hindrance. But people are required to present passports or identity cards upon demand, and goods can not be transported nor can domestic animals cross the boundaries without rigid control. Airplanes are held to restricted routes. Desire to protect "standards of living" and imperative necessity to protect national currencies contribute to the multiplicity of restrictions at the frontier. The net result is that in many parts of Europe barriers

²⁰ Whittlesey, "The Impress of Effective Central Authority upon the Landscape."

which are invisible but more formidable than the Alps have been erected as a concomitant of postwar nationalism. This is no mere figure of speech, but concrete actuality, since the added cost of transportation across rugged physical barriers is much more readily overcome than the towering structure of tariffs, import quotas, exchange limitations, and all the other economic restraints of recent invention.²¹ Similarly, if human beings could come and go as freely as they chose, thousands would probably trek across their frontiers, almost anywhere, in the hope of escaping from almost unendurable psychological and economic pressures. Today the barriers to trade in Europe rise like walls between nations, slow the pulse of industry, rob artisans and laborers of a chance to earn a living, impoverish peoples whose ample capacities are thwarted, and instill fear and despair.

Added to the functions of frontiers in Europe in recent years is the teaching of millions of youth that boundary lines are partitions between the people one loves and the people one hates, instinctively, violently, "patriotically." No one can tell how long it may take to liquidate the legacy of that doctrine.

Prior to the World War the boundaries in Europe operated much more equally and much more simply than they do today. If the average conditions of boundary functioning prevailing in Europe in 1910, let us say, be considered as the norm, the changes

²¹ The author originally intended to insert here a diagram in the nature of a profile showing the cost of transporting certain goods across Europe. Transportation costs would appear as a gentle incline, and at the international boundaries would be sharp peaks resembling saw teeth. Tariff specialists have shown that it is almost impossible in recent years to prepare such a diagram, however, on account of import quotas, exchange restrictions, etc., which vary in their practical effects even from week to week and which introduce delays that may entail spoilage of some commodities. These variants together with psychological and other factors complicate the situation beyond the possibility of making a true diagram even for a single commodity. For a generalized effort to represent graphically the heights of tariff walls in Europe see Morrison-Bell, *Tariff Walls*. Photographs of maps of Europe with tariff walls are reproduced, facing pp. 28, 34. For specific statistics relating to wheat, wheat flour, and boxed apples, for the years 1923, 1928, and 1933, giving relative heights of import duties expressed in terms of percent of value and listing "other obstructions," see *Reciprocal Trade Agreements: Hearings before the Committees on Finance, U. S. Senate, 73d Cong., 2d Session, on H. R. 8687 . . . April 26, 27, 30, and May 1, 1934*, pp. 126-27. See also Staley, *World Economy in Transition*.

in the role of boundaries in different parts of the continent have been quite uneven in the last thirty years.

In Scandinavia and between the Netherlands, Belgium, and France the boundaries perhaps operate more nearly with prewar simplicity than elsewhere in Europe. On the other hand, the boundary of the Soviet Union, as is generally known, is very rigidly controlled. In other countries it is almost impossible for a human being, an ounce of gold, or a piece of paper currency to cross the frontier without permission from a central government. It will be recalled that the boundary between Poland and Lithuania was completely closed for more than a decade.

Chapter VII

GRAPPLING WITH EUROPEAN BOUNDARY PROBLEMS

WE HAVE OBSERVED how boundaries operate in Europe and how multifarious and onerous are many of the restrictions upon the peoples of the continent. These regulations are partly an outgrowth of the boundary problems which harass the chancelleries of Europe, and at the same time the problems have been aggravated by the restrictions—a vicious circle.

Broadly speaking, boundary problems may be regarded as embracing all types of problems which people have come to associate with the boundaries and which exist because the boundaries are there. They include: (1) problems that arise in determining where to place a boundary that has not yet been established; (2) problems involved in interpreting the provisions of a treaty or arbitral award, when it comes to identifying the points and features named with what surveyors or a boundary commission find upon the ground; and (3) problems that originate in the inconveniences and dissatisfactions associated with the manner in which the boundaries actually function. The boundary problems in Europe at the present time belong almost wholly to the last category.

In discussing European boundary problems, it is not easy to reach agreement as to which are boundary problems and which are problems belonging to other categories. An economist, for example, may regard the problems of Europe as being in almost no instances boundary problems at all. Certainly in Europe there are no boundary disputes which closely resemble those during the last century between the countries of the Americas, where

two or more nations claimed the same territory in little-known regions.

Boundary problems, as they were considered at the Peace Conference in 1919-20, however, were very comprehensive. Territorial and boundary questions were indivisible. The placing of a boundary involved almost every conceivable aspect of national life and international relations: language, the desires of the local populations, communications of all sorts, raw materials, defensibility of frontiers, and other factors. It was not anticipated that, once the new frontiers were fixed, boundary problems would become more complex and acute. On the contrary, it was intended that boundary regimes should be simplified, and provisions were made to assure their being progressively simplified. Boundary problems have multiplied beyond all expectation because of the economic dislocations produced by the World War, the extent of the boundary changes made in Europe, and the functions of frontiers in the present concept of nationalism in Europe. The creation of new nations, the erection of thousands of miles of new boundaries, the manifest need of maintaining order and protecting industry and national currencies—all throughout a continent impoverished and partly devastated by war—led to the adoption of tariff and exchange measures that prolonged the disruption incident to the war itself.

Boundary changes made in Europe since 1914, considered merely from the standpoint of the lengths of frontiers concerned, are very extensive. Of approximately 17,000 miles of international boundaries in Europe in 1937, about 4,500 miles were new boundaries with no counterpart in 1914, and about 3,000 miles were shifted boundaries corresponding to approximately 3,400 miles of prewar boundaries that disappeared from the map altogether. In other words, continental Europe possessed in 1914 about 13,000 miles of international boundaries and in 1937 approximately 7,500 miles of boundaries which did not appear on the map of 1914. (These are tentative figures, all of them presumably underestimates; in the absence of pub-

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lished data, they are based upon careful tracing of the boundaries on medium-scale maps with a precise instrument.) In addition to all this, some boundaries have not shifted at all where one or both sovereignties have changed, including the Germany-

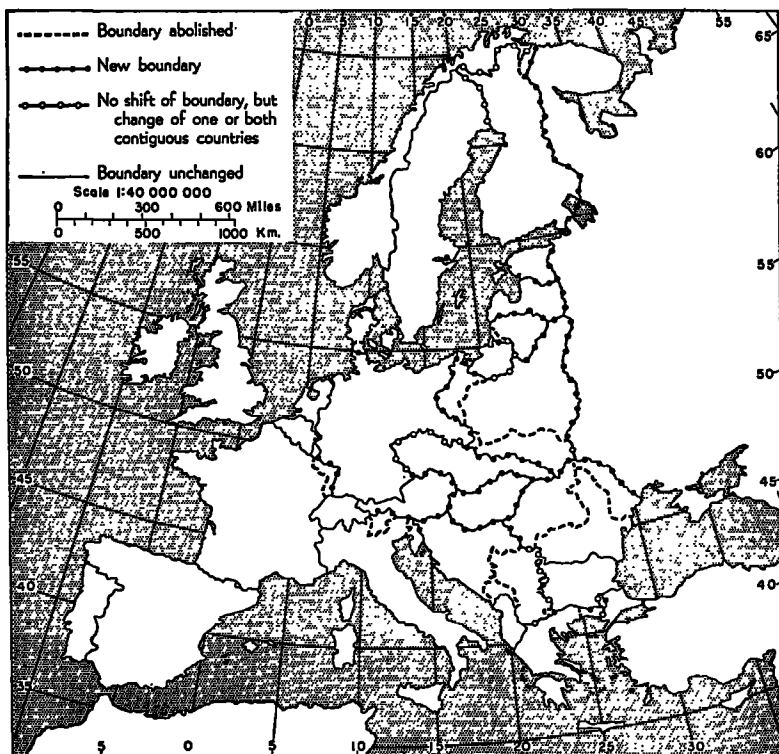


FIG. 15. EUROPEAN BOUNDARIES, 1914 AND 1937

Russia boundary of East Prussia that became a part of the Germany-Poland boundary, and part of the Hungary-Serbia boundary that became part of the Rumania-Yugoslavia boundary. To estimate the total effect of such extensive boundary changes is impossible. Almost every mile of new boundary required consideration of many factors—boundary commission labors, severance of many close ties between populations on

opposite sides of the new line, establishment of new customs services, negotiation of new treaties, and other adaptations.

If we consider the present status of boundaries in Europe without regard to the war which began in 1939, a very considerable number of geographical areas in Europe might be listed in which international boundary problems are acute or at least incipient. To consider them separately is impossible,¹ and to analyze the more contentious phases of the numerous troublesome problems would serve no useful purpose. Many of the difficulties are so complex that to make more than the most cursory comments would be impossible. Furthermore, the mere mention of some of them tends to arouse emotions rather than to provoke intelligent discussion of the fundamental factors.

It is more important to observe the efforts that have been made to grapple with pressing European boundary problems and to attempt to weigh the adequacy of these and of other efforts that might be made. Problems common to many boundaries are usually of greater importance than those apparently peculiar to a single frontier or portion of a frontier; in any event, the former deserve first consideration.

In general, boundary problems are most numerous and most perplexing in those parts of Europe where the frontiers have shifted most frequently in the last few centuries, especially within the last one or two generations. On the other hand, the boundaries of Spain with both its neighbors, France and Portugal, and the main portions of the boundaries of Switzerland are among the most enduring frontiers of the continent. Fortunate would be the situation if the problems regarding the boundaries of central and eastern Europe were no greater than the problems relative to these older boundaries.²

¹ See Hartshorne, "Survey of the Boundary Problems of Europe," a lecture delivered on the Harris Foundation at the University of Chicago in 1937. The published lecture contains a table of 56 disputed areas in Europe, with data concerning population, and certain geographic associations with the claimant states.

² The map of Europe entitled "Duration of Boundaries since 1500" (Fig. 16) here reproduced by permission, is from Gilfillan, "European Political Boundaries." See also map of the duration of boundaries in east-central Europe, 1000-1920, in Ronai, *Biographie des frontières politiques*, p. 35.

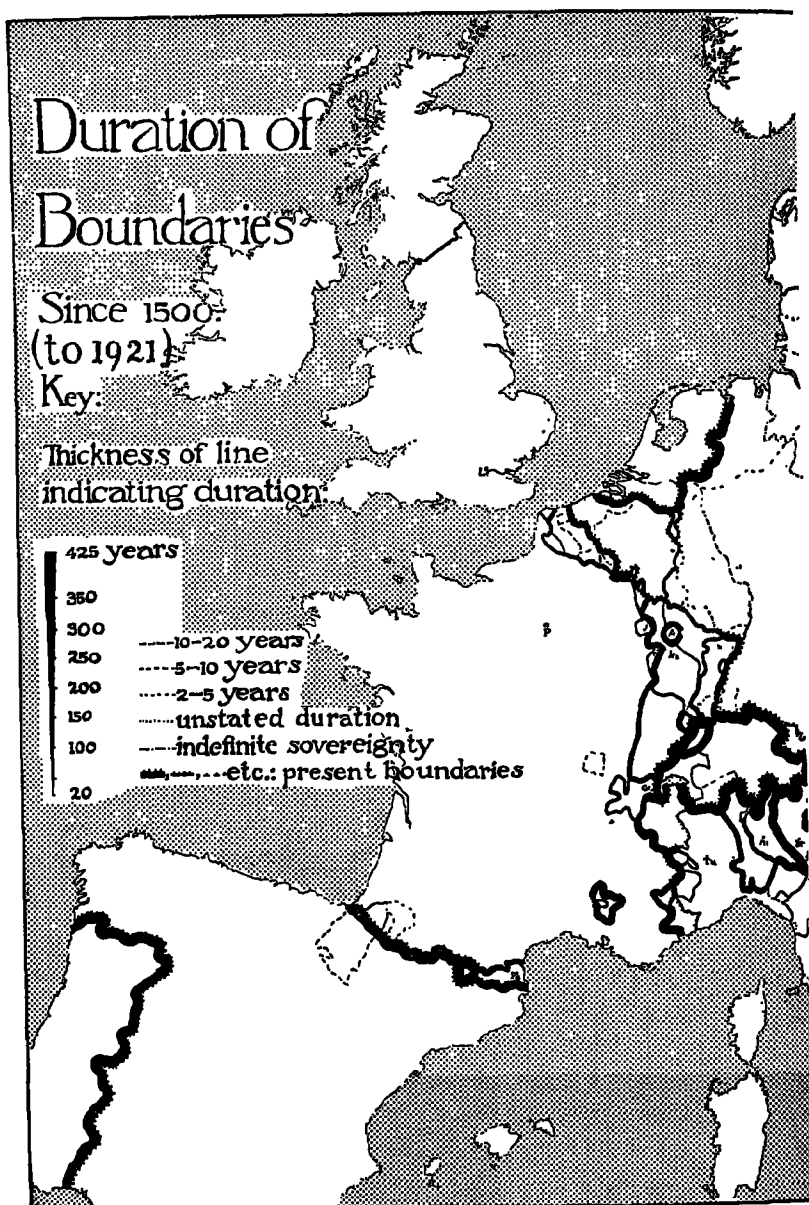
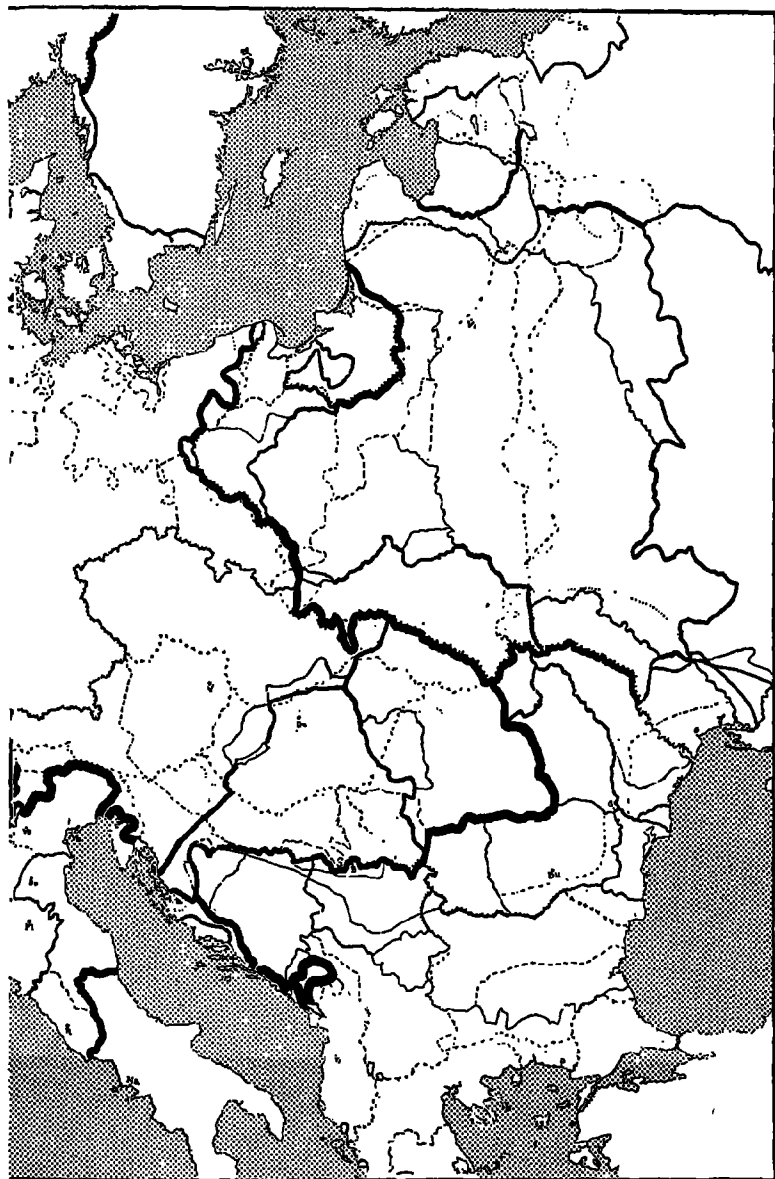


FIG. 16. EUROPE: DURATION
(Map by S. C. Gilfillan, reproduced from the *Political*



OF BOUNDARIES SINCE 1500

Science Quarterly, September, 1924, by permission.)

The relatively permanent and frictionless boundaries do not afford a clue to any simple formula regarding desirable and undesirable boundaries. They do not conform to simple boundary types, and other boundaries of apparently similar types constitute zones of friction. The Pyrenees³ are frequently cited as almost the ideal boundary and as an effective mountain barrier; the linguistic boundary does not coincide, however, as Basque is astride it in the west, and Catalan in the east. The boundaries of Switzerland⁴ coincide with linguistic frontiers nowhere save along a short portion of the frontier with Italy.

One of the boundaries that confute theorists is the Franco-Belgian frontier, in what was long a zone of wars. For more than a century it has proved to be one of the most pacific and stable boundaries in Europe. Yet there is no physical feature for it to follow, and it traverses linguistic zones of both French (including Walloon) and Flemish. Thousands of workmen cross the boundary twice daily.

We have already remarked that boundary problems in Europe are largely due to the fact that too much history is remembered, in contrast to the genesis of boundary problems in the Americas where too little geography was known when the boundaries were first defined. This fundamental difference renders it very difficult for people in the United States to comprehend the boundary problems of Europe. The boundaries are set as perimeters of areas of separate nationalities, and, because the essence of national consciousness is sentiment, each nation builds upon those periods in history and those grander limits of territorial extent which reflect the accomplishment of great things in the past and which serve as earnest of equally great achievement in the future. The irreconcilability of some of these historical backgrounds as a basis for modern states is manifest,

³ On the Pyrenees boundary, see Brigham, "Principles in the Determination of Boundaries," p. 209; see also Whittlesey, "Trans-Pyrenean Spain," and "Andorra's Autonomy."

⁴ On the Alps boundaries see Brigham, *op. cit.*, pp. 209-11; see also Coolidge, *The Alps*.

but for the parties immediately concerned it is difficult to appreciate.

ATTEMPTS TO COPE WITH EUROPEAN BOUNDARY PROBLEMS

In the post-Napoleonic settlements efforts were made to deal with the effects of boundaries and national policies. In the Peace of Paris in 1814 a beginning was made "to facilitate the communication between nations, and continually to render them less strangers to each other."⁵

"Technical uniformity of railways," resulting from conferences held at Berne from 1886 onwards, included the adoption of a standard railway gauge, exchange of rolling stock, and simplified practices in the handling of freight movements and in assessing charges, until prior to 1914 relatively little difficulty was experienced in making uninterrupted shipments of goods all the way from the Atlantic or the North Sea to the Mediterranean or the Black Sea.⁶ The stability of prewar national currencies, the essential identity of values of the franc, the lira, the peseta, the belga, and other units of currency, facilitated international monetary transactions.

Serious efforts to cope with Europe's boundary problems in recent years have centered largely in the League of Nations and in a number of related conferences and commissions. The League itself provides means of ameliorating the problems. The activities that bear most directly upon the functioning of boundaries are chiefly of two kinds: (1) simplification of boundary regimes and boundary functions in general; and (2) provi-

⁵ Treaty between France and Great Britain, May 30, 1814, Article 5. British and Foreign State Papers, Vol. 1, Part 1, p. 159. Treaties containing the same stipulations, verbatim, were concluded on the same day between France and Austria, Prussia and Russia.

⁶ See Conference on Freedom of Communications and Transit. 1st, Barcelona, 1921. General Transport Situation in 1921, Statements Submitted by the States Which Took Part in the First General Conference on Communications and Transit, held in March-April, 1921; with an Introduction by Professor Tajani, Vols. 1 and 2, Geneva, 1922.

sions to prevent the occurrence of local boundary incidents and friction and to handle quickly and amicably, before serious troubles develop, those situations that do arise.

*Simplification of Boundary Regimes and Functions*⁷

At the Peace Conference the problems issuing from the boundary and territorial changes were studied, and initial efforts were made to secure and maintain freedom of communications and of transit and equitable treatment for the commerce of all members of the League.⁸ The Peace Conference Committee on Ports, Waterways, and Railways framed general clauses that went beyond the interests of the contracting powers only.

A large part of the League's activities which bear most directly upon the simplification of international boundary functions has been concerned with its Communications and Transit Organization, the only League technical organization with a written and semiautonomous constitution. The first general conference on communications and transit, which was held in Barcelona in the spring of 1921, was attended by forty powers; succeeding conferences have been held in Geneva in 1923, 1927, and 1931. Other international conferences have been held on specific subjects, including simplification of customs formalities and international regime of railways and of maritime ports. Among the general treaties and conventions concluded, the following are intended to regulate and simplify relations at international boundaries:

Convention and Statute on freedom of transit (Barcelona, April 20, 1921).⁹

⁷ One of the best examples of an attempt to ameliorate the situations growing out of the creation of new states and new boundaries, which does not fall under either of the categories treated in the following pages, is afforded by the German-Polish convention relating to Upper Silesia, concluded at Geneva, May 15, 1922. Its regulations are very extensive: there are 606 articles in the convention and 25 in the final protocol. During a fifteen-year period of transition there were two neutral bodies, a mixed commission and an arbitral tribunal, sitting permanently in the area and holding very frequent hearings. The convention expired on July 15, 1937, and the duties of the two international bodies terminated on that date.

⁸ Covenant of the League of Nations, Article 23(e).

⁹ Gt. Brit., *Treaty Ser.*, 1923, No. 27 (Cmd. 1992).

Convention and Statute on the regime of navigable waterways of international concern (Barcelona, April 20, 1921).¹⁰

Convention relating to the simplification of customs formalities (Geneva, November 3, 1923).¹¹

Convention and Statute on the international regime of maritime ports (Geneva, December 9, 1923).¹²

Convention and Statute on the international regime of railways (Geneva, December 9, 1923).¹³

Conventions have also been concluded relating to the development of hydraulic power and the international transmission of electric power. Passport simplification has been attempted, with appreciable but still inadequate results. Among other efforts to cope with economic and communications problems incident to boundary changes and boundary regimes may be mentioned the World Economic Conference held in Geneva in 1927 and the conference on the unification of river law held there in 1930.

Passports were rarely required in traveling in Europe, except in Russia, prior to 1914. As we have observed, passports, identity cards, local frontier passes, and the like are now universally required if the privilege of crossing the frontier is to be granted, whether the person be a foreign tourist, or a farmer tilling his own soil in two states.

However, all attempts to cope with European boundary problems dealing with the large aspects of communications, visible and invisible tariffs, customs and passport regulations, and the like have proved inadequate. The observations of Dr. Gustav Stresemann in the Assembly of the League of Nations, September 9, 1929, are appropriate here:

How many things there are that appear so extraordinarily absurd about Europe and its construction, from the economic point of view! It is absurd to me that Europe should appear not to have progressed, but to have gone back. Look at Italy. We can scarcely imagine there

¹⁰ *Gt. Brit., Treaty Ser.*, 1923, No. 28 (Cmd. 1993).

¹¹ *Ibid.*, 1925, No. 16 (Cmd. 2347).

¹² *Ibid.*, No. 24 (Cmd. 2419).

¹³ *Ibid.*, No. 23 (Cmd. 2418).

being no united Italy, or the different parts of what we now call Italy being separate economic entities and fighting against one another. Nor can we conceive without a smile what Germany was like before the Customs Union, when merchant ships from Berlin were held up on the Elbe because some other Customs system began at the frontier of Anhalt. Just as these are ideas which strike us as quaint and mediaeval and which we have long outgrown, so there are many things in the New Europe which give a very similar impression.

. . . Is it not absurd that modern invention should have reduced the journey from South Germany to Tokio by twenty days, while in Europe itself hours are wasted stopping at frontiers for Customs inspections, as if Europe were a sort of little huckster's shop still open beside the big world emporium. . . .¹⁴

Provisions for Handling Boundary Incidents

Boundary incidents that occur may quickly assume serious proportions in regions with differences of language and culture. A number of such affairs have been effectively handled in the last twenty years through the new machinery at Geneva.

In the Demir-Kapu incident of October 19, 1925, on the Bulgarian-Greek frontier, a soldier in one of the frontier posts was killed. The situation became disquieting because armed civilians reinforced the military force; exaggerated reports spread rapidly, so that further clashes threatened; and the inhabitants of certain villages near the frontier were seized with panic and desired to emigrate into the interior of the country. Prompt action by an international commission which was sent to investigate on the spot exercised a salutary effect and quickly fixed an indemnity to cover damages arising from an invasion of foreign territory by military forces of one of the countries. The report of the commission of inquiry affords a good illustration of the character of many boundary incidents and of proposed useful procedures to reduce the number of them and to solve the problems arising from those that are unavoidable.¹⁵

¹⁴ From address in the 9th plenary meeting of the 10th Assembly of the League of Nations, Sept. 9, 1929 (League of Nations Official Journal, Special Supplement No. 75, p. 70).

¹⁵ League of Nations, Commission of Enquiry into the Incidents on the Frontier between Bulgaria and Greece, No. C.727.1925.VII.

Treaties relating to many of the boundaries make various provisions for the administration of the frontier to prevent incidents and to deal with situations developing from some unpreventable local disturbance. The idea of having specially qualified persons rush to the scene of boundary incidents, like firemen to a local conflagration, may be sound, but appears not to have progressed far in the last decade.

Perhaps an extreme provision is illustrated by the convention of 1922 between Finland and the Russian Socialist Federated Soviet Republic, intended to secure peace at their frontier by establishing a zone on each side of the boundary from Lake Ladoga to the Arctic, the outer limits of which were defined almost as specifically as if it were an international boundary. Military units were strictly limited within the zones; elements disturbing to the peace were to be removed; either party undertook, upon request of the other, to expel from its frontier zone those nationals of the other party who were not permanent inhabitants of that zone and whose actions appeared likely to disturb the neighborly and peaceful relations existing on the frontier.¹⁶

REGIONAL ARRANGEMENTS CUTTING ACROSS NATIONAL BOUNDARIES

Many of the problems resulting from European boundaries are neither local nor continental but regional in character. In the United States we are accustomed to the regional handling of many problems, as in the consideration of questions affecting the railroads in the eastern part of the country, the establishment of Tennessee Valley Authority, and the Colorado River Compact. Two examples of European questions that have been handled regionally for many years will be cited.

Geneva and the French Free Zones

The free zones in France, adjacent to Geneva, Switzerland, constitute a century-old solution of somewhat unusual problems.

¹⁶ Convention between Finland and the RSFSR regarding measures taken in order to secure peace at the frontier, signed at Helsingfors, June 1, 1922, League of Nations, *Treaty Ser.*, Vol. 16, pp. 337-45—English translation.

In consequence, an appreciable area within France lies outside the French customs frontier and in effect constitutes a free port into which the entire world, and particularly Geneva, may import freely.

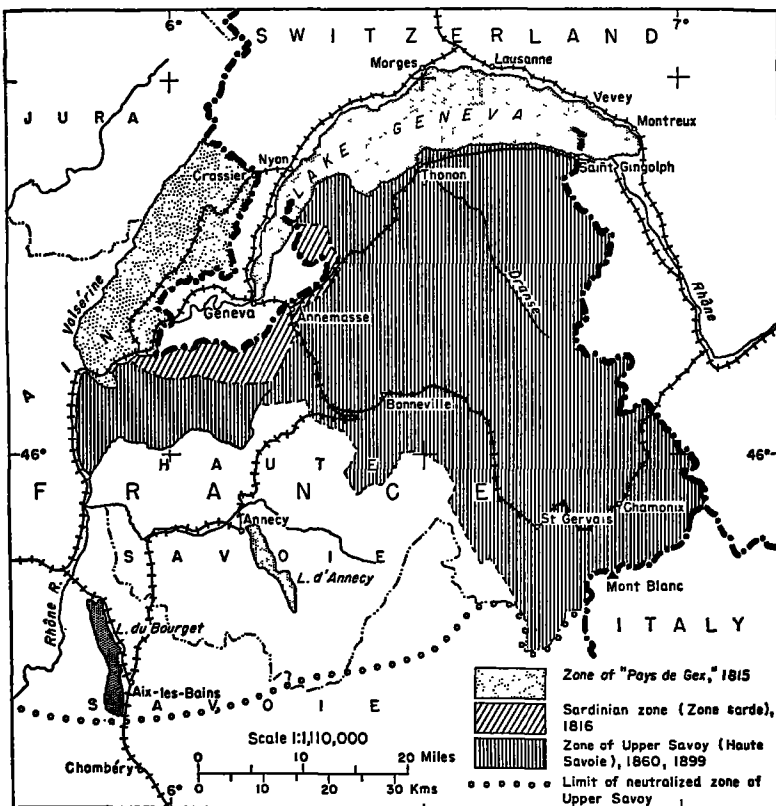


FIG. 17. THE FRENCH FREE ZONES ADJACENT TO GENEVA

Geneva, the largest French-speaking city in Switzerland, is situated at the southwest tip of the Republic and is built at the lower end of Lake Geneva or Léman on both banks of the Rhône River, which flows out of the lake toward the west and south. The city lies between the Jura Mountains on the west and the Mari-

time Alps on the east. Except for a land connection scarcely more than two miles long, with the canton of Vaud on the north, it is entirely surrounded by French territory—the department of Ain on the west and the department of Upper Savoy on the south and east. The valley or trough in which Geneva lies is, however, a geographical and economic unit. The city of Geneva is the natural economic center of a district, chiefly agricultural, that lies almost wholly in France.

Growing out of developments of the Napoleonic period, with a territorial addition half a century later, but with roots much farther back in history, three distinct zones were established in French territory adjacent to Geneva:

(1) The zone of Gex (Zone du Pays de Gex), created by Article 1 of the treaty of Paris, November 20, 1815

(2) The Sardinian zone (Zone sarde) established by Article 3 of the treaty of Turin, March 16, 1816

(3) The free or large zone of Upper Savoy, embracing territory ceded to France in 1860 by the King of Sardinia, comprising a customs zone created by French decree, June 12, 1860, and modified by law, March 30, 1899¹⁷

The special rights enjoyed by the zone inhabitants were long irksome to the French government and to the inhabitants of contiguous French territory. At the outbreak of the World War, France established a police cordon at the international frontier, and later she moved the customs barrier to the boundary. Article 435 of the Treaty of Versailles, to which Switzerland was not a party, declared that the guarantees of 1815 in favor of Switzerland

¹⁷ Both the little Sardinian zone and the large free zone are in the Département de la Haute-Savoie, and the three zones are locally referred to as "Les Zones franches de Départements de l'Ain (Zone of Gex) et de la Haute-Savoie" (Haute-Savoie and Sardinian Zone). To these should be added the small "Zone de Saint-Gingolph," on the lake shore, to the east of the large free zone, dating from Sept. 9, 1829. The French portion of Lake Geneva is also sometimes referred to as the "lake zone."

See Jones, "Upper Savoy and the Free Zones around Geneva, and Article 435 of the Treaty of Versailles," *Transactions of the Grotius Society*, Vol. 10 (London, 1925), pp. 173-88; legend on map accompanying Permanent Court of International Justice, Series C. No. 17-1, 17th session, 1929, Vol. 3. See also Bowman, *The New World*, pp. 304-6, with map.

concerning the neutralized zone of Savoy "are no longer consistent with present conditions" and that they were consequently abrogated.

The question was referred to the Permanent Court of International Justice in 1928, and it was decided that the free zones were not suppressed by the Treaty of Versailles. The two countries being unable to agree upon the regime of the zones, the question of the regime to be established was referred to the same court, which rendered its final judgment on June 7, 1932. The publications of the Permanent Court of International Justice relating to the free zones of Upper Savoy and the District of Gex fill ten published volumes.¹⁸ Thus a question that had divided France and Switzerland since 1919 was settled. According to the court, France was required to set back its customs lines in conformity with the stipulations of 1815-16, but the court added that this did not prejudice the right of France to collect, at the international frontier, taxes not having the character of customs duties. On the other hand, the court declared that, since the zones were being maintained and since products of the zones were to be favored, importations of merchandise into Switzerland should be permitted to come in free of duty or at reduced rates.

The special regime of the free zones of Savoy and Gex affords an example of an effort made over a period of more than a century to solve economic and political problems growing out of the presence of an international boundary at a place where a strict enforcement of all the functions of such boundaries in the modern national sense would work unnecessary hardships. The solution may not be all that is to be desired, but it represents an attempt to take into account geographical and economic facts which are complicated and which have their roots far back in history.

The Danube River

The principles relating to the navigation of international rivers were applied to the Danube and its mouths by the treaty of

¹⁸ Series C. No. 17-1, 17th session, 1929, Vols. 1-4; Series C. No. 19-1, 19th session, 1930, Vols. 1-5; Series C. No. 58, 25th session, 1932 (1 vol.).

Paris, March 30, 1856 (Article 15).¹⁹ Numerous treaties since that date have dealt with problems of the Danube.²⁰ The treaty in 1878 established the so-called European Commission of the Dan-



FIG. 18. THE DANUBE BASIN AND THE INTERNATIONAL WATERWAYS OF EUROPE

ube, which exercises its authority over the delta of the Danube from Braila to the Black Sea; the Commission enforces "its de-

¹⁹ Hyde, *International Rivers*, p. 16.

²⁰ For a list of treaties, etc., relating to the Danube, 1680-1918, see Ogilvie, *International Waterways*, pp. 188-99.

cisions by its own authority through its own agents and under its own flag." ²¹ The International Commission of the Danube, created under Article 347 of the Treaty of Versailles, "is charged with the care of navigation upon the 'fluvial' Danube from Ulm to Braila, [and] operates through the agents of the various territorial sovereigns. Broadly speaking, its functions are those of surveillance rather than of direct administration." ²² A convention instituting the definitive statute of the Danube was signed at Paris, July 23, 1921. ²³

One of the advantages accruing to the states on an internationalized river, like the internationalized portion of the Danube, is the right to use a merchant flag entitled to international respect.

Doubtless many of the problems associated with European boundaries, whether they relate to small areas like the free zones near Geneva or to major portions of the continent like the Danube River and basin, may be solved or the conditions ameliorated, by separate consideration of the problems peculiar to the given region. Apparently efforts to deal with international questions inherent in areas traversed by one or more international boundaries, by specialized treatment of the regional problems, should be encouraged. Such efforts can not solve the major problems, but they constitute an important step in the right direction and may have a wholesome effect on the general international situation.

PROBLEMS OF DEMILITARIZATION

The defensive properties of an international boundary have been stressed by the military profession and by many others who undertake to deal realistically with the problems of the world in which we live. "Boundaries . . . should be difficult to violate and as strongly defensive in character as nature or art can make them; the chance of active aggression being almost in exact pro-

²¹ Smith, *Economic Uses of International Rivers*, p. 123.

²² *Ibid.*

²³ Gt. Brit., *Treaty Ser.*, 1922, No. 16. For further information regarding the Danube see Pasvolsky, *Economic Nationalism of the Danubian States and Hines, Danube Navigation*.

portion with the facility for carrying it out," wrote Colonel Sir Thomas Holdich.²⁴ Mountain boundaries, when sufficiently high and rugged, have commonly been regarded as the most effective land boundaries, though deserts and swamps may be as effective. But there are not enough mountain systems and swamps—and there are no deserts—to serve the purposes of military defense in relation to the pattern of nationalities in Europe; and many of the mountains have relatively little defense value. Modern military science has undertaken to supplement natural barriers by creating series of artificial volcanoes in the form of frontier fortifications of the most formidable character.

It can not be candidly maintained, however, that the most impregnable fortified zones are those most assured of peace. The Canadian representative at Geneva in February, 1928, expressed a contrary opinion in these words:

It is the considered opinion of the Canadian Government that, particularly at the present time, security may be advanced more effectively by disarmament than by increased pledges of armed assistance. Our experience of the working of naval disarmament on the Great Lakes, which for a thousand miles form the boundary between the United States and Canada, and of military disarmament along more than two thousand miles of frontier, has shown how the absence of armed forces promotes confidence and does away with the fear and suspicions which are the enemies of security.²⁵

In the literature relating to the functions of international boundaries, the term "demilitarized frontiers" occurs surprisingly often. "Demilitarization" presumably implies the demolition of previously established military structures or equipment. In many instances, however, the phrase is intended merely to signify that a boundary not hitherto militarized will not be fortified in the future.

To obtain data from which one might construct a map of the world, or even of any continent, showing those boundaries and portions of boundaries protected by extensive military structures is very difficult. Of the total of approximately 100,000 miles of

²⁴ *Boundaries in Europe and the Near East*, p. 12.

²⁵ Marshall-Cornwall, *Geographic Disarmament*, p. 159.

international boundaries in all continents, certainly only a small percentage is militarized. Outside of Europe and certain portions of Asia the nonmilitarization of frontiers is decidedly the rule rather than the exception. The total length of fortified and militarized boundaries in Europe greatly increased within the decade 1930-39, and included boundaries between countries which have no fear of aggression from one another.

The hope of solving Europe's boundary problems by military force or the threat of force can hardly seem sanguine today even to those who most implicitly rely upon it. He who professes to believe that the human race would become effete if it did not occasionally engage in war (though he is always careful to insist that a period of peace is essential to the consolidation of gains that are being effected) should logically be the first to admit, if his premise be true, that even if he were master of a single world-embracing empire, civil war would be a periodic necessity for the human race. He might be reminded, however, that science has dispensed with the practice of bloodletting and the use of leeches—in fact that transfusions are sometimes essential to save life.

The increase in the military function of many of the boundaries in Europe since 1920 has complicated many boundary problems, and it assures the solution of none. The economic and spiritual impoverishment of millions of people by staggering expenditures on armaments has needlessly deferred the prospect of settlement of boundary problems already more complicated and burdensome than ever before.

CONCLUSION

Europe owes much to its boundaries. They have been essential to the development of homogeneous states within limits of moderate extent. The creation of some of the international boundaries has increased friendship and decreased friction, as in the case of separation of Norway and Sweden in 1905. Today, however, the continent of Europe as a whole presents the anomaly of being the most highly industrialized and intrinsically the most interdependent continent on earth, and at the same time of being

the most highly compartmentized, measured both by the length of boundaries proportional to the area and, much more significantly, by the height of its towering structures of economic nationalism.

Europe has approximately 60 international boundaries—Belgium-France, Belgium-Germany, and so forth. In an area roughly equivalent to that of Europe, the United States has 109 interstate boundaries (including the two of the District of Columbia).

Let it not be assumed, however, that an analogy exists between the federation of the original thirteen colonies in the United States, with their common background and interests, and the situation which led Briand and others in our time to propose the creation of a United States of Europe. Difficult as were the problems of the "founding fathers" of the American republic, they were simple indeed in comparison with those of European statesmen today.

Taking into consideration the extent to which the continent of Europe is segmentized or compartmentized by its numerous international boundaries and even more the unprecedented functional complexity of these fences or partitions, plus the fact that economic interdependence is inescapable in the most highly industrialized continent, it is not astonishing that unrest is great.

The only kind of self-sufficiency possible within fences placed like the international boundaries in Europe is apparently the self-sufficiency of the animal kingdom. Stockades could be built where the frontiers are located, and livestock could survive. The marvels of chemistry in the transformation of minerals from the soil to edible plants by means of sunlight and chlorophyll suffice to supply the simple wants of animals and of the most primitive human society. But the needs of modern man require products which come from the ends of the earth, in which no nation is self-sufficient—petroleum, rubber, palm oil, manganese, tin. These products can be transmuted into forms that supply the demands of modern man only by means of interdependent social organisms more sensitive and complex than any previous human

associations in history. Sugar, coffee and tobacco have become necessities of life in the Arctic homes of the Lapps. The distribution of world resources transcends all international boundaries and in the long run may compel coöperation upon a reluctant continent.

The boundary problems of Europe can therefore never be solved to any considerable degree by shifting boundaries. To consider whether a certain boundary should follow a river or a mountain crest, a linguistic frontier or a historical line is almost futile if the boundary functions are to remain of equal complexity. The solution of many of the most perplexing problems may be found in progressive and far-reaching simplification of the boundary functions. If a fraction of the ingenuity, industry, and will power now being mobilized to make each nation effective in a military sense at its frontiers were applied to the elaboration of a program for the gradual adaptation of boundary regimes to the necessities of our times, it would seem that the problems would not be found intractable.

The international boundaries of Europe are in general well adapted to simple administrative functions such as those of provinces and counties, but they are becoming unworkable as limits to the range of economic activities of nations which are members of the whole interdependent human society. The European boundaries are probably on the whole better adapted to a United States of Europe than the state boundaries of the United States are to a United States of America. In general, the former bear a definite relation to geographic factors, both physical and human, whereas the boundaries within the United States largely ignore these fundamental elements.

Considered abstractly, one might be tempted to remark that the surest way to eliminate many of the boundary problems in Europe would be to eliminate the boundaries themselves. If some of these fencelike structures could be removed by mutual agreement the results might be salutary in many respects, although obviously many difficulties would remain and some new difficulties might be created. Certainly if the boundaries are removed

by force, the internal problems engendered by the amalgamation of unwilling peoples would probably sterilize all the possible benefits.

Pacific economic and political associations and aggregations of nations have been vetoed in Europe for decades because of fear that the increased power would be used aggressively, owing to the absence of superior external authority and internal moral restraint. The fear of disturbance of the balance of power has thus contributed to the generation of every available ounce of military power to upset the balance and to counteract restraints upon what should have come to be regarded as normal and efficient interrelationships. If Pennsylvania feared that Illinois and Iowa might coöperate too closely and thus become too prosperous and powerful and if the whole territory of these United States were blighted by such a pattern of antagonisms, relatively little prosperity would exist in this part of the world.

The fable of the wind and the sun, which competed to make the man remove his cloak, may be applicable to boundary problems. Where all the furies that can be unleashed have failed to induce nations to lower the barriers, the warmth of feeling that would develop in common recognition of present mutual needs and interests might prove effective.

By wholesome simplification of international boundary functions, by the removal of barriers to trade and to normal human movement from place to place, all Europe would find more room for its activities, more profit in its industry and commerce, more security, and saner peace.

Chapter VIII

ASIATIC BOUNDARIES

ASIA, the largest continent, with half the world's population, is one of the most fortunate of the continents in respect to its international boundaries. In proportion to its vast area, its boundaries measure less than those of any other continent except North America and little more than two-fifths of those of continental Europe.

With its lesser industrial development and with its commerce conducted largely with other continents by sea rather than across its own international boundaries, Asia is very much less harassed by boundary pressures and friction, in spite of the teeming populations of its southern and eastern margins, than is its continental appendage, Europe, on the west. A glance at its history and the historical maps reveals that Asia, over a period of two thousand years or more, has had both greater simplicity and more continuity of political pattern than Europe. Furthermore, Asia's boundary problems of today are largely those incidental to the extension of the dominion of European nations over much of Asia. Relatively few problems are of Asiatic origin; they are due chiefly to the transplantation of European concepts of nationalism and national boundaries on the part of Russia, Great Britain, and France, as they advanced toward each other and established boundaries with each other and with the principal Asiatic powers, including China, Japan, Turkey, Persia or Iran, and Siam. It is chiefly in the domain of the former Ottoman Empire that the number of boundaries and consequent compartmentization of territory approaches that degree of compartmentization found in Europe; this is an area of relatively sparse population, however—agricultural and to some extent nomadic.

In Europe some of the international boundaries of today are several centuries old, and even in the New World some thousand miles of boundaries are nearly a century old or older; but in Asia practically none of the present international boundaries is a century old, and many of them have been delimited since 1880. In all of Asia probably no international boundaries were established antecedent to human settlement. Therefore, the extent to which boundaries in Asia have been defined in ignorance of the actual geography and topography of the country may seem surprising.

The principal river boundaries of Asia are the Amur and the Ussuri, the Yalu and the Tumen, the middle portion of the Mekong, the upper Oxus or Amu Darya, and the Aras. Of these the only important navigable river is the Amur. Straight-line boundaries are to be found, as would be expected in a continent with a long political history, chiefly in desert areas in Asia (notably in Arabia, Syria, Palestine, and Iraq) and along portions of the frontiers of northwestern India and Afghanistan; the 141st meridian boundary in New Guinea and the 50th parallel boundary in Sakhalin Island are lines that embalm the geographical ignorance of the time when they were delimited. By and large, the boundaries in Asia are in mountainous areas and in deserts and therefore in regions of low population density.

ANCIENT BOUNDARIES

Brief consideration of the ancient boundaries of Asia will throw light upon the changing role of boundaries in a rapidly changing Asia.

The Great Wall of China

The Great Wall of China is almost unique among artificial rampart boundaries. The estimated length of the Great Wall proper is 2,150 miles, with 1,780 miles of branches and loops, totaling 3,930 miles. In height it varies from 20 to 50 feet, averaging about 22 feet. The base is 15 to 25 feet thick and the top 12 feet wide or more. In places the wall is solid and level enough to support an automobile; elsewhere it consists of mas-

sive flights of steps. At intervals averaging 600 feet are towers 40 to 60 feet high. Against Mongol and Hun this vast structure, continuous and impressive, alertly guarded with its system of watchtowers and signals, was as effective in its day as could be expected. Beyond it no invader could trespass without incurring the wrath of an aroused people.¹

Rudimentary in conception though these structural barriers may be thought to have been, they were effective in the age and against the foes for whom they were devised. There can be no greater mistake than to ridicule them as monuments of misdirected effort or of human vanity. The Great Wall of China, commenced before the Christian Era and continued at intervals for 1,700 years, was a genuine palladium to the heart of the Chinese Empire. Though occasionally circumvented and more than once pierced by the nomad hordes, for centuries it held back the Mongolian Tartars from Peking, acting as a fiscal barrier for the prevention of smuggling and the levying of dues, as a police barrier for the examination of passports and the arrest of criminals or suspects, and as a military barrier against hostile invasions or raids. It was even more a line of trespass than a frontier. . . .²

The zonal character of the Great Wall as a boundary is described by Owen Lattimore:

The Great Wall itself is not in fact a *linear* frontier; it is more the most important delimitation of what is in fact a *zonal* frontier, of which there are also other minor delimitations. Apart from the fact that there are important variations even in the main line of the Great Wall, there is a whole system of small "outwork" walls, running all through Inner Mongolia, from Chinese Turkistan in the extreme west to Manchuria in the east. . . . The various "outwork" systems north of the Great Wall in some sense represent tidal marks in the alternating pressures of nomad peoples on the north and the agricultural Chinese on the south. . . . Along the lines of these walls there have, in fact, recurrently appeared marginal or zonal peoples, the political equivalents of the zonal rather than linear geographical frontier.³

¹ For a description of the Great Wall see Clapp, "Great Wall of China," with map.

² Curzon, *Frontiers*, p. 25.

³ Article in the *Geog. Jour.*, Dec., 1934, pp. 493-94. See also Lattimore, *Inner Asian Frontiers of China*.

The Roman Limes

Another ancient boundary in Asia is the system of fortifications established by the Romans in Syria, known as the *Limes Arabicus*, which has recently been studied with exceptional results by Père A. Poidebard, with the aid of aerial photography. This Roman limes persisted for more than seven centuries. The remains of Roman *castella*, ruined posts, old wells, and signal stations have been found, embracing a system of protected routes in a defensive zone along the border for protection against Parthian and Sassanian invasion.⁴

DESERT BOUNDARIES

The harsh limitations imposed by the deserts of Asia upon their sparse populations, chiefly nomadic by necessity, are reflected in the political boundaries. Except in so far as the inflexibility of boundaries (according to the European concept of precisely fixed lines without width) has been indelibly impressed, desert boundaries have for centuries comprised zones of varying width, as shifting as the desert sands. Where exact lines have been fixed in recent years, the requirements of the local inhabitants have been consulted more than has sometimes seemed feasible in establishing boundaries in Europe. This is natural; few other considerations must be taken into account, and if a boundary cramps the nomad and denies him access to the precarious resources of wells, water holes, and grazing grounds, he is apt to disregard it until distant authorities reluctantly modify the frontier.⁵

Exceptional upon modern political maps are the neutral zone between Iraq and Nejd, the arcs of circles forming parts of the boundaries of Kuwait,⁶ and the considerable portion of the boundary between Turkey and Syria which follows part way the railroad to Baghdad and which barely leaves the railroad within Turkey.

⁴ Poidebard, *La Trace de Rome dans le désert de Syrie*.

⁵ See maps in Bowman, *The New World*, pp. 140 and 551, and related text.

⁶ The semicircular northern boundary of Kuwait was defined by convention between the United Kingdom and Turkey, signed July 29, 1913, but never ratified.

WATER BOUNDARIES

Among the international boundaries in Asia that follow water-courses we shall consider but one: the boundary in the Shatt al Arab between Iraq and Iran, as they are known today, but originally between Turkey (from which Iraq or Mesopotamia was detached following the World War) and Persia, as Iran was conventionally called in former European and American usage.

The Boundary in the Shatt al Arab

Iraq inherited from Turkey a boundary dispute with Persia that was at least a hundred years old. Turkey and its successor, Iraq, have claimed and exercised jurisdiction over the whole breadth of the Shatt al Arab, the common estuary of the Tigris and Euphrates rivers, to the left or east bank, on the Iranian or Persian shore. The government of Persia or Iran has claimed that the boundary should follow the thalweg, because this, rather than one of the banks, should be naturally regarded as the boundary. Iraq maintained, however, that the Shatt constitutes its sole communication with the sea, whereas Iran has a long seacoast on the Persian Gulf.

Article 2 of Treaty of Erzerum of 1847 between Persia and Turkey, resulting from the intervention of Great Britain and Russia, provided in part as follows:

The State of Turkey also firmly undertakes that the town and seaport of Mohammarah, and the Island of Al Khizr, and the anchorage place, and also the lands of the eastern bank, i.e., of the left side of the Shatt-el-Arab, which are in the possession of tribes admittedly attached to Persia, shall be in the possession of the State of Persia in full sovereignty. Moreover, Persian ships shall have the right to navigate the said river in full liberty, from the point where it flows into the sea to the point of juncture of the frontiers of the two parties.

The treaty was ratified in 1848 at Constantinople.

The boundary was thus left indefinite, and the four powers appointed a commission to determine it. The line recommended by the commission in 1850 was rejected by both Persia and Tur-

key. In 1869 a map was finally prepared on which two lines were drawn, and it was indicated vaguely that somewhere between them should be the "true" boundary.

The local inhabitants, however, reached an informal working agreement by which the frontier was supposed to run down the middle of the Shatt al Arab; in the control of navigation, both parties exercised customs and police supervision.

In 1910 Great Britain and Russia again tried to help settle this problem. A protocol signed at Constantinople in November, 1913, made some modifications in the Erzerum treaty of 1847. In 1914 the frontier was duly demarcated by a Turko-Persian commission with British and Russian assistance.

The Treaty of Erzerum had given Persia the port and anchorage in the Karun River, opposite the old town of Mohammerah and between that town on the one bank and the island of Abadan on the other. Because modern steamers could not anchor opposite the old Mohammerah, the 1914 frontier gave Persia, as the anchorage of Mohammerah, one-half of the Shatt al Arab from about a mile below to about four miles above the mouth of the Karun. The modern port of Abadan was not provided for, as the boundary continued to follow the low-water line on the Abadan bank and adjacent islands.

As a result of the war, from 1914 to 1919 the control of the Shatt al Arab was in the hands of British military authorities and in 1919 was delegated to the director of the port of Basra. The Treaty of Erzerum of 1847, the protocol of 1913, and the decisions of the delimitation commission of 1914 were adhered to, and tact was shown in dealing with Persian authorities.

The Anglo-Persian Oil Company's tank steamers had by this time come to carry the most important part of the trade as far as Abadan. Persia, however, could not exercise its previous informal right of policing and patrolling the river. Persia, under the new ruler, Reza Shah, refused to recognize Iraq's claim to the left-bank boundary which was established in 1914 as the boundary of the old Turkey.

Various efforts were made to assist Iraq and Persia in solving

this boundary problem. However, by direct negotiation Iraq and Iran, in the frontier treaty signed at Teheran, July 4, 1937, fixed the boundary in the Shatt al Arab in the thalweg for about four miles opposite Abadan, but elsewhere the boundary remains on the eastern bank. The oil ships of the Anglo-Iranian Oil Company use the deep-water route to Abadan.

MOUNTAIN BOUNDARIES

From the separatist viewpoint, some of the mountain boundaries in Asia leave nothing to be desired. The northern frontier of India and some of the frontiers of Russian territory in central Asia trace their courses over superb ranges that may forever defy man save as he soars in the air above them. And yet nowhere is there less reliance upon the adequacy of a single line of boundary than in these most forbidding mountain masses. Referring to the northwestern frontier of India, Fawcett writes:

This frontier of the Indian Empire now consists of the wide area between the Indus River and the northern boundary of Afghanistan. Here there is what Lord Curzon has well called a "threefold frontier," the three boundary lines of which mark the limits of different degrees of the claims and responsibilities of the Indian Empire. There is first the inner administrative boundary, which limits the territory for which the Indian Government is directly responsible. Next comes the Durand line, delimited by an agreement made with Afghanistan in 1893, which marks the limits between the claims of India and Afghanistan to authority over the border tribes and so forms the boundary of the area within which the Empire is directly responsible for the maintenance of order; though many of the tribes within it are practically autonomous. Lastly, the northern boundary of Afghanistan limits the outer strategical frontier, since it was demarcated by Britain and Russia jointly, and it marks the limit between the areas respectively under the influence of these two Powers.

This strategic frontier thus includes the protected buffer state of Afghanistan; and hence that country is, for some purposes, within the Indian Empire.⁷

Without adding more about the extensive mountain boundaries in Asia, we shall proceed to the problems of boundary-

⁷ Fawcett, *Frontiers*, pp. 86-87.



PLATE V. BOUNDARIES IN ASIA

Above, left: Manchurian-Russian boundary monument, erected in the 12th year of the reign of Kuang Hsü (1886). *Acme Photo.* *Above, right:* Amur River, Manchurian-Russian boundary. *Acme Photo.* *Middle:* China-Burma boundary on the new Burma-Yunnan highway: Chinese temporary customs buildings at Wanting, Yunnan, in foreground; the boundary is in the small stream immediately beyond. *Photograph by Carl Neprud.* *Below:* Toll gate to the Khyber Pass into Afghanistan, at Janrud, India. *Photograph from Ewing Galloway.*

making in that continent and consider incidentally some of the other mountain boundaries.

PROBLEMS OF BOUNDARY-MAKING IN ASIA

In considering some of the problems of boundary-making in Asia we shall sketch some of the geographic and historical factors of Asiatic frontiers, including several frontiers which do not lend themselves to treatment under separate classifications as desert, mountain, or river boundaries.

Afghanistan-Russia Boundary

The establishment of both the northern and southern frontiers of Afghanistan was the joint concern of Great Britain and Russia, especially during the last quarter of the nineteenth century.⁸ Afghanistan itself did not require the delimitation and demarcation of exact boundaries, but was involved in setting definite limits to its territory as a buffer state. For convenience we shall quote freely from the writings of Colonel Sir Thomas Holdich and others who were engaged in surveying and marking the boundaries in this region. A boundary between Afghanistan and Russia was sketchily defined by Great Britain and Russia in 1873.

. . . the treaty-makers were dealing with a part of Asia which had seldom been traversed by Europeans; which possessed but few landmarks of which the positions could be said to be fairly well determined; and of which such conjectural mapping as existed was of the most nebulous character. Yet they did not hesitate to rely upon certain details which were to be found in a most uncertain map, and to embody the names of places in the agreement which they could only hope by the grace of providence might be found to exist where they were represented to exist.⁹

Referring to the surveying and demarcation of the western portion of the Afghan-Russian boundary, Colonel Holdich writes:

⁸ See Habberton, *Anglo-Russian Relations Concerning Afghanistan*.

⁹ Holdich, *Countries of the King's Award*, p. 20.

The length of boundary to be demarcated between the Hari-Rud and the Oxus was less than four hundred miles, so that our resources in political strength to deal with such local questions as might arise in the course of its construction were ample. . . .

With the military escort, which included both cavalry and infantry, and numbered about five hundred men with its full complement of officers and followers; also a few scientific experts and correspondents with *their* followers, and an enormous baggage train, the total strength of the Commission mounted up to a figure which certainly seemed disproportionate to the object in view, and which might naturally have caused some misapprehension in the minds of our Russian colleagues. Sixteen hundred men and sixteen hundred baggage animals left the Helmund for the Hari-Rud, and there they encountered a second British party numbering several hundreds more, which had traversed Persia to reach the rendezvous.

During the winter of 1884-85 there must have been between two and three thousand members of the British Commission in Turkestan, without reckoning the small army of local employés who served as couriers and agents in their own country.¹⁰

The eastern end of this same Afghan-Russian boundary presented different problems. Here Afghanistan extends eastward to meet Chinese Turkistan, thus separating Russian and British territory in Asia by a narrow projection of the buffer state.

The work of the Pamir Boundary Commission formed the most remote, and, in some respects, the most satisfactory, of the many phases of boundary demarcation to which the Kabul agreement of 1893 gave rise. Here, amidst the grassy valleys and glacier-freighted ridges of the world's roof, a boundary was actually demarcated, mile by mile, which followed the terms of the agreement fairly closely; and here at last was laid to rest the ghost of years of apprehension as to possible invasion of India from the extreme north.

. . . Hitherto we had been placing a buffer of independent tribes between ourselves and Afghanistan. Here we reverted to first principles, and defined a buffer between ourselves and Russia. It is not an imposing buffer—this long attenuated arm of Afghanistan reaching out to touch China with the tips of its fingers. It is only eight miles wide at one part, and could be ridden across in a morning's ride. It presents no vast physical obstacle to an advance of any sort;

¹⁰ *The Indian Borderland*, p. 99.

physical obstacles, however, are not wanting, but they lie on the Indian side, and they are rude enough and difficult enough to answer all possible purposes. It is a political intervention—a hedge, as it were—over which Russia cannot step without violating Afghan-

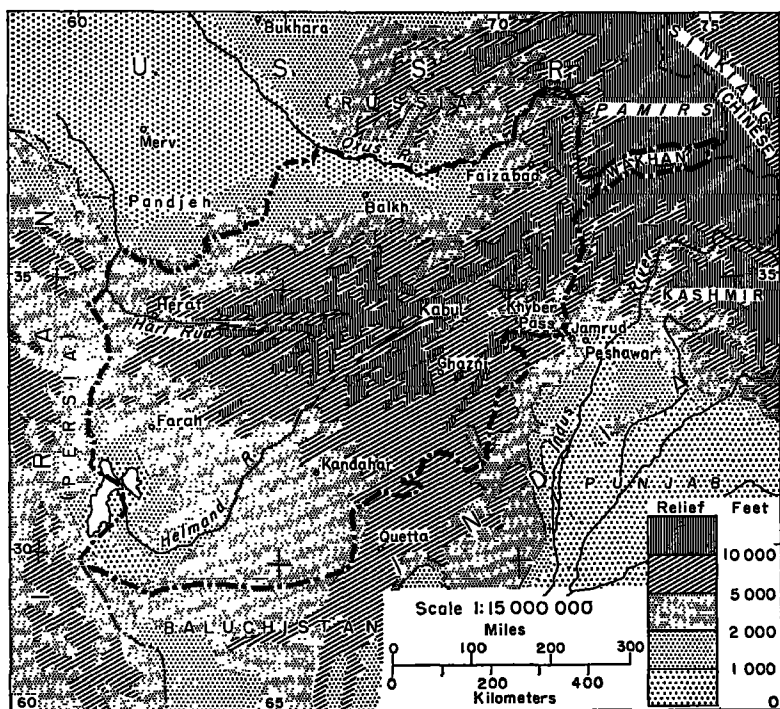


FIG. 19. THE BOUNDARIES OF AFGHANISTAN

istan, and the violation of Afghanistan may (or may not) be regarded as a "casus belli."¹¹

. . . Up the valley of the Wakhan we worried and twisted our way, day after day, along the devil's pathway which flanks the river gorge. There were no flat spaces, and no reasonable footpaths along that route. If we were not engaged in a rocky scramble upstairs, we were zigzagging down into depths measuring thousands of feet merely to make a fresh start on another climb after stumbling through a river at the bottom. It was a Pilgrim's progress, unbroken and un-

¹¹ *Ibid.*, pp. 284-85.

relieved by any Christian alleviations; and out of that valley to the right hand or the left it was impossible to get. . . .¹²

Then followed the setting out of a programme for marking off a boundary which should reach from the end of the blue lake to the uncertain regions of Chinese occupation. The giant peaks of the range which we had crossed by the Benderski pass (the range which divides the Little Pamir from the Great) answered the purpose of the boundary well enough as far as they went. In that eternal wilderness of snowfields and glacier which has now been named Range Nicolas after the Russian Emperor, and which looks down on the placid sheet of Lake Victoria (the name which Russian courtesy has finally adopted for "Woods" Lake) on one side, and the swampy irregularities of Chakmaktin on the other, no one is ever likely to question the exact line on which he may set his foot and say he is passing from Russia to Afghanistan. No living soul has ever been there yet—or is ever likely to be there.¹³

Afghanistan-India Boundary

The size of the boundary commissions and of the supply organization engaged on some of the boundaries in this part of Asia is surprising; it greatly surpasses anything of the sort in the New World. The surveying and marking of the Indian boundary of Baluchistan with Afghanistan involved an organization comparable to that surveying the northern boundary of Afghanistan. A. H. McMahon, of that commission, writes:

The Baluch-Afghan Boundary Commission started in March, 1894, and by June, 1896, succeeded in laying down the boundary-line to Persia. The length of this line from the Gomal to Persia is over 800 miles, and it took us nearly two full years to complete it.¹⁴

. . . We had an escort of 150 infantry and 60 cavalry. Our whole party, including escort, survey party, office establishment, and tribal chiefs and followers, amounted to about 1000 men and 600 animals, *i.e.* camels, horses, and ponies. The Afghan commissioners, who subsequently joined us, brought an escort and camp following amounting to much the same number as ours.¹⁵

The means followed in establishing a boundary probably vary nowhere more than in Asia since they are adapted to local cus-

¹² *Ibid.*, p. 290.

¹⁴ "Southern Borderlands of Afghanistan," p. 393.

¹³ *Ibid.*, p. 292.

¹⁵ *Ibid.*, p. 395.

toms. When two tribes in the region of the Indian-Afghan frontier are unable to agree upon a line to be established and maintained, the laying down of a boundary line by oath is a method which seldom failed, once they agreed to use it. Referring to the determination of a boundary between Afghanistan and India, Colonel McMahon recounts how this expedient is applied:

Some leading man of one or other side is chosen and accepted by both sides for the ordeal. Then, when his reluctance to undergo that ordeal has been overcome, the fateful moment arrives amidst a scene of excited tribesmen stilled for the moment by anxious expectation. With the Koran firmly held on his bare head and with bare feet, the oath-taker steps forward, but not until every care has been taken to ensure that no loophole has been left him for the saving of his soul from the sin of perjury. The Koran must be a genuine Koran; it must be held on his bare head, with nothing intervening; and the soles of his feet must be both bare and clean, with no particle of his own tribal soil adhering thereto. Thus prepared the oath-taker steps out, and the course he follows becomes the boundary line of tribal territory. Sometimes that line follows a quite unexpected course, differing greatly from the lines claimed by either party, and yet it has subsequently been found to be an old and long-recognised boundary.

On one occasion of this kind a curious thing happened. Two tribes had urged widely divergent claims, but eventually consented to settlement by oath. The oath-taker, an aged greybeard, staggered off on a course that took both sides genuinely by surprise. It was a line of unusual nature and paying little or no regard to the natural physical features of the country, but found to be marked at salient points by a series of crumbling rock cairns, evidently of great age, whose history and even existence seemed generally unknown to both sides.¹⁶

India-Tibet Boundary

The boundary between India and Tibet was established by a treaty to which Great Britain and China were parties. Colonel McMahon, who was appointed British plenipotentiary in 1913, referring to the boundary settlement between India and Tibet, writes:

¹⁶ "International Boundaries," p. 9.

That portion, however, which for some five hundred miles formed the boundary between India and Thibet, owing to our greater local knowledge and more detailed survey, supplemented by the results of special survey parties sent out to examine the less known areas, admitted of more detailed and exact definition. For great lengths of it lofty mountain ranges and watersheds buried in eternal snow facilitated verbal definition and rendered demarcation on the ground (except in a few small special and more inhabited areas) either impossible or superfluous.¹⁷

Afghanistan-Iran Boundary

Unfortunately for Western Seistan a slanting line from northeast to southwest cuts it in half, giving Persia the western, and Afghanistan the eastern, half. No division of property that could have been made could so certainly have relegated this ancient Drangia (once called the "granary of Asia") to a future of comparative desolation. The splendid system of canal irrigation, which once turned the vast dry alluvial plains into a sea of wheat, had its head in the Helmund, and was entirely dependent on the Helmund for its supply of water. . . . Here we have an object-lesson on the lasting disadvantages of a boundary which cuts an irrigation system in two.¹⁸

In a region of scanty rainfall, the boundary between Afghanistan and Iran or Persia traverses for about fifty miles the large shallow lake in Seistan known as Hamun-i-Helmand, into which the principal Afghan river, the Helmand, empties. Afghanistan and Iran have recently negotiated a convention providing that the water of the Helmand River "from the Kamal Khan dam on" shall be divided evenly between the two countries. A joint commission will determine the quantity of water available in the autumn of each year and will, by means of canals, so regulate its flow that one-half goes to Iran and one-half to Afghanistan.

Turkey-Persia (Iran) Boundary

The prewar boundary between Turkey and Persia, from the Persian Gulf to Mount Ararat, was approximately twelve hundred miles long. The boundary, long a subject of controversy, was not demarcated until 1913-14.¹⁹

¹⁷ *Ibid*, pp. 12-13.

¹⁸ Holdich, *The Indian Borderland*, p. 108.

¹⁹ The following account of the boundary is based upon Ryder, "Turco-Persian Boundary," pp. 227 ff.

The frontier assumed more or less its present position early in the 17th century. The interest of the British and Russian governments became manifest in 1842. The Treaty of Erzerum was signed in 1847, fixing the boundary in general terms. A commission covered the frontier zone, 1848-52. After the Crimean War, British and Russian surveyors labored for eight years in St. Petersburg and produced two separate maps in the first eight sheets of which were four thousand discrepancies that led to the production, in another five years, of the "Carte Identique," completed in 1869. Upon the latter a considerable portion of the boundary was definitely laid down, but elsewhere the line was undefined except that it was admitted to lie within the twenty-five-mile zone of this beautiful but (as was subsequently proven) highly inaccurate map.

In 1913 a protocol was signed in Constantinople laying down on paper about three-fourths of the entire boundary and requiring a commission to determine the boundary in the remaining quarter and to demarcate the entire frontier. From December, 1913, to October, 1914, the commission made new surveys of nearly the entire line and erected 227 boundary pillars.

The lack of good water in some stretches and the dependence upon water with the properties of concentrated Epsom salts, such as that of the Tib River, sometimes facilitated the making of prompt decisions, the disputants saying "Put the boundary where you like, only let us get away."

Speaking of the establishment of a boundary through Kurdistan, Colonel Ryder remarks, "The fixing of a frontier was however repugnant to the finer feelings of the Kurds."²⁰ Some idea of the magnitude of operations on this boundary may be gained from the fact that the British commission, which surveyed and mapped the southern end of the boundary, took two hundred and fifty mules and horses and a hundred men; supplies were maintained for this outfit for ten months. The size of the Russian force that surveyed southwardly from Mount Ararat to join forces near Vazneh at about 36 degrees north latitude, was presumably comparable.

²⁰ *Ibid.*, pp. 234-35.

Minor differences arose regarding portions of this frontier, and in 1932 Turkish and Iranian plenipotentiaries were appointed to fix the boundary in these areas. The 1932 accord accepted most of the boundary as demarcated in 1913-14—that is, the part lying to the north of the subsequently created kingdom of Iraq—but made rectifications of the boundary in three areas. Apparently this agreement was largely a recognition of existing conditions, as the greater part of these areas was already held by the state to which this agreement allotted them.²¹

Iraq-Turkey Boundary

One of the recently established boundaries of Asia worthy of study is the present boundary between Iraq and Turkey.

The treaty of peace with Turkey, signed at Lausanne on July 24, 1923, provided (Article 3, Section 2) that the frontier between Turkey and Iraq should be laid down in friendly arrangement to be concluded between Turkey and Great Britain (the mandatory power in Iraq) within nine months and that, if no agreement had been reached within the time mentioned, the dispute should be referred to the Council of the League of Nations. Negotiations in Constantinople in May and June, 1924, having been unsuccessful, the question was submitted to the Council in September, 1924; and it was decided to set up a special commission of three members to study the problem on the spot and to make recommendations.

After the appointment of this commission, the Council, at a meeting in Brussels on October 29, 1924, adopted a "status quo" frontier. This "Brussels line" constituted the northern limit of the region which the special commission was requested to study.

The commission's report²² is of interest because of the thoroughness of the study, the analysis of geographical factors, and the maps which were prepared and reproduced as part of the commission report.

The commission was requested to lay before the Council of

²¹ See G. R. C., "Turkish-Iranian Boundary," with full-page map.

²² League of Nations, "Question of the Frontier between Turkey and Iraq."

the League "all information and all suggestions which may be of a nature to assist it in reaching a decision."²³ The territory studied comprised, roughly, the former Turkish vilayet or province of Mosul. The commission obtained information from London and Ankara and proceeded to Mosul, where they examined the territory by motorcar and horse, on foot, and by airplane.²⁴

The fact that boundary problems are frequently matters of more than detail of delimitation and sometimes involve considerable areas, together with the fate of their populations, is illustrated in the opinion of the commission: "it can not share the view so often put forward in British documents and speeches that a plebiscite would be impossible because the question at issue is a frontier problem and not the fate of the Vilayet of Mosul."²⁵ The commission pointed out that the territory covered 87,890 square kilometers, an area even greater than that of the vilayet of Mosul, and that it contained 800,000 people; furthermore, that the League Council was free to choose either the northern or the southern limit of the disputed area, or any intermediate line, as the international boundary.

The commission undertook to consider the best interests and the wishes of the very complex population, the geographic, ethnographic, religious, economic, communication, political, strategic, and historical factors. The disputed territory was described as a transition zone extending from the rugged Kurdish mountains on the north to the Arab plains on the south and from Syria and Armenia on the west to Iraq and Luristan on the southeast. The commission reported that "The country is inhabited by Kurds, Arabs, Christians, Turks, Yezidi and Jews, in that order of numerical importance. . . ."

The distribution of the people, population densities, the character of the town of Mosul, the ethnographic situation, the habits and seasonal movements of the nomadic tribes were all studied. That the nomadic habits of the Kurds differ profoundly from those of the desert Arabs was observed (page 41). A map was made to show the winter quarters, the routes of migration, and

²³ *Ibid.*, p. 5.

²⁴ See map of itineraries, No. 1.

²⁵ *Ibid.*, p. 17.

the summer quarters of the Kurdish nomads (Map No. 8).

When it came to historical considerations, the commission noted that "the country now called Iraq has had an extremely chequered history throughout the centuries and its history can only be followed with any certainty from the sixteenth century onwards" (page 59). Nevertheless, the commission recounted the history from the times of the Medes and the Persians and of Alexander the Great, through the struggles between the Romans and the Persians, the early Christian era, the sudden sweep of Islamism, and on down to recent times.

In its final conclusions (page 88) the commission stated that, from the viewpoint only of the populations concerned, the disputed area should not be partitioned. The commission was of the opinion that important arguments, particularly of an economic and geographical nature, and the sentiments (with all the reservations stated) of the majority of the inhabitants of the entire territory favored the union with Iraq of the whole territory south of the Brussels line, subject to certain conditions.

A treaty regarding the Turkey-Iraq boundary settlement was concluded on June 5, 1926, by the United Kingdom, Iraq, and Turkey, establishing the Brussels line, with slight modification, as the definitive boundary and providing for demarcation with intervisible monuments. The functioning of the boundary is covered by Chapter II, "Neighbourly Relations," which provides for a frontier zone 75 kilometers wide on both sides of the boundary; for the appointment of a permanent frontier commission meeting at least once every six months to settle amicably all questions on the execution of the treaty provisions regarding "neighbourly relations"; and for the suppression of pillage or brigandage within the zone.²⁶

²⁶ See the treaty between the United Kingdom and Iraq and Turkey regarding the settlement of the frontier between Turkey and Iraq, together with notes exchanged, signed at Angora, June 5, 1926 (Cmd. 2912). A modification of the Brussels line was made to the south of Alamun and Ashuta so as to include in Turkish territory that part of the road which connects these two places and which crosses Iraq territory. The description of the Brussels line is given in an annex to the treaty. A map in the scale of 1:1,000,000 is included in Command Paper No. 2912.

BOUNDARIES IN RELATION TO NATIVE
PEOPLES AND LOCAL PROBLEMS

The manner in which international boundaries affect the lives of local populations in Asia differs markedly from the influence on European populations, which we have already noted. Asiatic boundaries traverse areas of low population density, many of them mountain and desert regions, and none of them industrialized.

Iraq-Syria Boundary

The boundary between the French mandate in Syria and the British mandate in Iraq (since terminated), as it was defined by a convention of December 23, 1920, was modified in 1932 primarily to take into consideration the interests of strong native tribes. The area involved is at the northern end of the Syria-Iraq boundary.

The Jebel Sinjar is a mountain chain of rugged topography. Rushing water fills deep gorges during the wet season. Desert surrounds the rocky chain on all sides. On the plain below the forest- and brush-covered slopes, in a belt of four or five kilometers fringing the desert, there are now cultivated fields recently developed by native Yezidis or Devil Worshipers. Culturally related to the Iraqi Kurds, the Yezidis speak a Kurdish dialect although their sacred books and rituals are in Arabic. Their unique religion and customs have borrowed from Zoroastrians, Christians, Moslems, and Jews. These hardy peoples, engaged in sheep raising and agriculture, have long lived apart and have avoided serving in Turkish armies.

The Iraq-Syria boundary line as defined in 1920 disregarded topography, practically bisecting the Jebel Sinjar, home of the Yezidis. The problems involved in the existence of a *de facto* boundary, as it had been adapted to tribal and topographic factors, and the *de jure* boundary of 1920 were referred to the League of Nations in 1932. On November 25, 1932, the Council of the League approved the commission report as a final settlement. The principal effects of the boundary rectification are:

(1) The "Bec de Canard" (Duck's beak), a narrow salient in the northeastern corner of Syria, is widened, giving Syria part of the productive Khabur River basin to the north and some arid grazing land containing salt deposits.

(2) All of the Jebel Sinjar area is given to Iraq.

(3) Instead of passing through Abu Kemal as a turning point, the boundary encircles it to the south, placing all of Abu Kemal within Syria.

The League commission, which studied the problem on the ground, did not attempt to follow the rather vague description of the 1920 convention, but found it necessary to consider the requests and recommendations of Syria and Iraq for trade territories. In the commission's opinion, the new line conforms more nearly with the original intent than did either the British or the French interpretation.

Syria-Turkey Boundary

A protocol relating to the surveillance of the Syria-Turkey frontier and establishing a boundary regime, and so forth, was signed June 29, 1929. The frontier regime applies to a zone fifty kilometers wide on either side of the frontier. Stationary inhabitants who owned property or pasture, watering place, or farming rights when the protocol was signed continue to enjoy their rights as in the past. The scheme employed is similar to that established on various boundaries in Europe, although it seems to be somewhat less rigid. An annual frontier card is required; it enables the holder to cross the frontier freely and to circulate within the limits of the zone. Cattle, implements, crops, and so forth, may pass from one side of the frontier to the other without payment of customs fees, pasture or watering taxes, or any other taxes otherwise involved in border crossing.

The Syria-Turkey boundary, it will be recalled, is unusual since a large part of the boundary follows the railroad from Choban-bey to Nisibin. This railroad, part of the line to Baghdad, is located here not far to the north of the northern margin of the Syrian desert and passes through several important towns.

The railroad remains in Turkey, and the boundary follows closely to the south of it.²⁷

Burma-Yunnan Boundary

The tribal traditions and organizations in a certain region between China and Burma do not lend themselves to world standards in international boundaries. Jurisdiction is personal, not territorial. Enclaves belonging to one district or state are found in the middle of another. Between two Wa tribal villages A and B there may be several which pay tribute to one or the other, or to both in different degrees. Interspersed may be villages of other racial groups, as the Shans, paying tribute to still a different group of mother villages far away. However intelligible this system might be to a medieval European, it is not adapted to modern European administration, and appears to be no system at all.

Efforts have been made for a number of years to rectify the boundary and adapt it to tribal interests, but no solution has yet been found. Some tribes live on hilltops and others establish their villages in the valleys. A watershed line bisects villages, and no physical or artificial type of line has been discovered which will meet the interests both of the turbulent tribes and of the British and Chinese administrations.²⁸

Locusts, Plant Diseases, and Parasites

Migrating hordes of locusts that devastate fields and impoverish peoples know nothing of international boundaries. Means of fighting these pests are the subject of at least two international treaties or agreements in Asia. Afghanistan and the Soviet Union reached an agreement regarding a campaign against locusts.²⁹ A

²⁷ Convention of Friendship and Good Neighborly Relations between France and Turkey, signed May 30, 1926, League of Nations, *Treaty Ser.*, No. 1285, Vol. 54 (1926-27), pp. 197-229. See Protocol No. 1, Delimitation of the frontier, pp. 207-13; Protocol No. 3, Frontier Surveillance, pp. 217-21.

²⁸ Norins, "Tribal Boundaries of the Burma-Yunnan Frontier"; Marshall-Cornwall, *Geographic Disarmament*, pp. 40-41; Cmd. 4884; British-Chinese conventions of March 1, 1894, and Feb. 4, 1897.

²⁹ Agreement regarding the campaign against locusts in the territories of the contracting parties, signed May 6, 1935, League of Nations, *Treaty Ser.*, No. 3800, Vol. 164 (1935-36), p. 336; English translation, pp. 345-49.

convention of similar intent has been signed by Iran and the Soviet Union, the parties agreeing to exchange information each spring season regarding the Moroccan locusts and their larvae and to adopt the most highly perfected scientific methods to exterminate winged locusts.³⁰ Likewise, a convention concerning the campaign against plant diseases and parasites has been concluded between Iran and the USSR.³¹ Protection against dangerous diseases and parasites of cultivated plants is sought in relation to seeds, bulbs, cuttings, and so forth, mention being made of wheat, potatoes, citrous fruits, and cotton.

CONCLUSION

The differences in character and degree between the boundaries in Europe and Asia are thus seen to be very great. As already observed, Asia has fewer miles of boundary per thousand square miles of area than Europe has. In spite of high population densities in India, China, and Japan, the boundaries are in zones of low population density. The few industrialized areas, as in Japan, are not directly affected by the boundaries. Asia has much larger areas populated only by nomads.

The functions of Asiatic boundaries are, therefore, much simpler than those of European boundaries; generally they appear to be less complicated than those of North American boundaries. Problems such as the Chinese Empire knew were quite different from those of either Europe or the New World and related to zones rather than lines. The legacy of history has not generated or perpetuated the spirit of irredentism to the extent to which it has plagued the smaller continent to the west. The trend apparently is in the direction of the more complicated functioning of boundaries in Europe. But as the functions are in general simpler, it may be hoped that they will always remain so.

³⁰ Convention signed Aug. 27, 1935, League of Nations, *Treaty Ser.*, No. 4070, Vol. 176 (1937), pp. 336-41.

³¹ *Ibid.*, No. 4071, Vol. 176 (1937), pp. 345-47.

Chapter IX

AFRICAN BOUNDARIES

COMPARISON of the map of Africa of 1880 with the map of today reveals how recently the impress of international boundaries has been made upon the second largest continent. From the time of the Portuguese explorations of the fifteenth century, which made known the coasts of Africa south of the Sahara, until the late nineteenth century, only narrow strips of territory here and there along the coast were stamped with the beginnings of the present-day European sovereignty pattern. An occasional map of earlier centuries attempted to place dividing lines in the interior to represent the limits of vaguely known tribes, but the tribes themselves knew of no boundaries in the modern sense.

With an area of nearly 11,400,000 square miles and more than 28,000 miles of international boundaries, Africa has about 2.5 miles of boundary for every 1,000 square miles of area. Being less compartmentized than Europe and South America, but more so than Asia and North America, it thus takes intermediate rank among the continents.

Geographically considered, Africa is less endowed with sustained mountain ranges that are adapted to military defense and presumably has less need of such qualities in its international boundaries than some of the other continents. However, it is not lacking in deserts, which constitute excellent natural zones of separation through which precise boundaries may readily be traced. The larger of the African rivers have been utilized but little for frontiers, the Nile only to a slight degree in its upper tributaries, the Niger not at all, the lower Congo with its impor-

tant affluent, the Ubangi, most of all. The Zambezi, the Limpopo, the Vaal and the Orange rivers serve only as boundaries between British territories.¹

Boundary controversies in Africa have resulted partly from the fact that the rivalries of colonial powers began in the days when too little geography was known. The straight-line boundaries to some extent express ignorance of geography, although in desert areas they function as satisfactorily as would almost any other kind of line. In relation to boundary history, African boundary-making somewhat resembles that in the New World. In the actual functioning of boundaries, so far as the peoples of the continent are concerned, Africa differs on the whole from other continents, but finds perhaps its nearest counterpart in the East Indies, in Borneo and New Guinea. With its low population density and little internal commerce and with native tribes only recently conscious of restrictions imposed by international colonial boundaries, the frontiers here interrupt native life less than they do in many parts of the world.

The partition of Africa engendered rivalries that at times threatened the peace of Europe. Africa consequently bears evidence of the fact that the powers hastened to make boundary agreements without finding time to survey and map unknown territories and without consulting the interests of native populations to the extent that they would presumably be considered today.²

Since boundaries in Africa are so little adapted to historical antecedents and predominantly follow rivers, watersheds, and straight lines, consideration of some of the general aspects of these so-called "natural" and "artificial" boundaries in connection with the discussion of typical African boundaries will be convenient. The boundaries in the great African lakes might be compared with those in the Great Lakes of North America, but are not discussed in the following pages.

¹ See Brigham, "Principles in the Determination of Boundaries," p. 208.

² See Fitzgerald, *Africa*; the Nyasaland boundaries are an instance, p. 221.

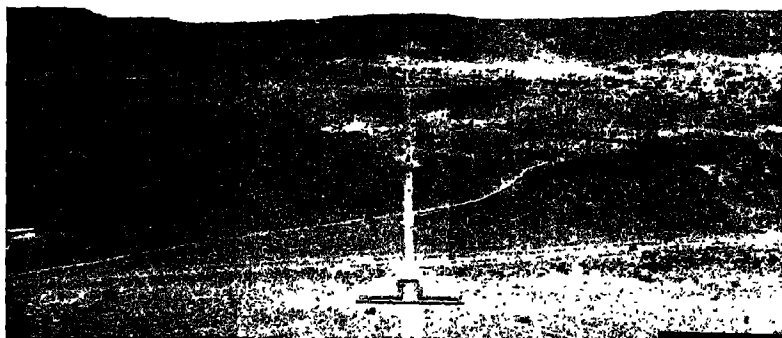


PLATE VI. BOUNDARIES IN AFRICA

Above: British Somaliland-Ethiopia boundary, demarcated through lava boulders and gravel. Below: Triple point, Anglo-Egyptian Sudan, Belgian Congo, French Equatorial Africa, on the Congo-Nile watershed, Photographs from the Royal Geographical Society: London.

STRAIGHT-LINE BOUNDARIES

Long straight-line boundaries, although very convenient to describe in a treaty or convention and equally convenient to depict upon a map, are not simple lines to locate upon the surface of the earth. They are sometimes called "astronomic lines" because their location upon the earth must be determined by means of astronomic and geodetic observations, in order to fix their relations to distant lines of reference—the equator or a standard meridian, as the meridian of Greenwich. Straight-line boundaries possess certain important merits. No matter how little the treaty negotiators may know of the location of the rivers and mountains, they can describe a boundary in terms of straight lines between known points or according to latitude and longitude, and expert surveyors can locate the boundary on the ground with no more than minor surveying differences to be adjusted. On the other hand, boundaries defined in terms of rivers, watersheds, and mountains may occasion most serious differences between members of a boundary commission if supposed rivers or mountains prove nonexistent or unidentifiable. A long straight line is more expensive to survey and fix accurately on the ground than a boundary line adapted to local features. Now that a reconnaissance can be made by means of aerial photography, it would seem better, in most cases, for treaty negotiators and arbitral tribunals to agree upon placing a boundary somewhere within a narrow zone or belt and to empower a boundary commission to fix a boundary somewhere within that narrow zone, adapting it to local topography and to such human factors as tribal territories, water holes or other water supply, and trails. The straight-line international boundaries in Africa are more extensive than in any other continent and constitute something like thirty per cent of the total. Some of these boundaries are considered here.

The Eastern Boundary of South-West Africa

A striking example of defining a boundary by means of straight lines is to be found in the frontier line fixed between

British Bechuanaland and former German Southwest Africa by an agreement signed at Berlin on July 1, 1890. The boundary followed the meridian of 20 degrees east longitude from the Orange River north to the parallel of 22 degrees south latitude, thence east on that parallel to the meridian of 21 degrees east longitude and north to the 18th parallel. This line, about 450 miles long, traverses the Kalahari desert. As Colonel Sir Thomas Hungerford Holdich has pointed out, in such country it would have been much less expensive and fully as satisfactory to have placed the boundary in almost any position in the same general region by adapting the line to local topography and geographic conditions, instead of fixing it by means of meridians and parallels. Colonel Holdich remarks:

Now a desert may form an excellent frontier in itself, just as may the highest altitudes of a great range of mountains where the eternal snow fields and the remoteness of an uplifted wilderness are never trodden by the foot of man. It is true that even in deserts, African or Asiatic, wild nomadic tribes may exist who can band themselves together for mischief, and raid across the frontier into each other's territory; and to them it may be desirable to point a landmark, either natural or artificial, and to say: "You may not pass that mark." Outward and visible evidence of a barrier is the only thing they can understand. But how does a meridian help the matter? It is not only neither outward nor visible without demarcation, but it may be very hard and very expensive to determine. In this case a lengthy series of geodetic triangulation had to be carried from Cape Colony to the south of the boundary till it entered German territory, entailing years of scientific labour in a most unwholesome climate, and costing a sum equivalent to the value of many thousands of square miles of useful geographical mapping, in order to determine with some approach to scientific exactitude where that meridian really lay. This was before the days of wireless receivers and the interchange of time signals. Then followed a most expensive and unnecessary process of demarcating a straight line through this unwholesome wilderness, and the final result, which cost valuable lives as well as money, was no more useful than would have been attained by a rapid compass traverse and an artificial demarcation with piles of stones at intervals—assuming that any demarcated boundary at all was required—somewhere near where that meridian

might be. The question whether that boundary were half a mile in error one way or the other, or whether the line was absolutely straight or not, was not worth a discussion involving the expenditure of a £10 note.³

It was impossible to carry the geodetic triangulation northward from the Orange River along the 20th meridian, and it was necessary

to make a wide *détour* through German territory. From this main series branches were pushed out laterally into the desert to determine as nearly as possible the position of the 20th meridian, and to fix the intersection of the boundary-line with such "tracks" as crossed it.⁴

The boundary commission was engaged on the demarcation of the 20th meridian portion of the boundary between November, 1898, and July, 1903, and apparently the demarcation of the entire boundary was never completed; the cost of the survey far exceeded the estimates.

The Boundaries of Libya

The boundaries of Libya as now defined by treaties between Italy on the one hand and France, Egypt, or Great Britain on the other hand largely comprise straight lines traversing chiefly desert but partly hilly areas.

Prior to 1919 no part of the southern boundary of Libya was defined in any agreement to which Italy was a party, nor to which Turkey, its predecessor until 1912, had been a party. Between 1900 and about 1925, however, the southern boundary of Libya was not infrequently indicated conventionally on maps as comprising extensions of boundaries to which Great Britain had agreed with France and with Egypt. This appears to have been due partly to the natural desire of map-makers to have complete boundaries as definite limits to the colors on their political maps. Altogether, the history of boundary definition in this area is interesting; it illustrates some of the problems of making boundaries where none have hitherto been fixed.

³ *Political Frontiers*, pp. 185-86.

⁴ "Surveys in British Africa," p. 553.

The Anglo-French declaration of March 21, 1899, first defined a limit to their respective spheres of influence in this area, part of it comprising a line from the Tropic of Cancer at 16 degrees east longitude and extending southeastwardly to the meridian

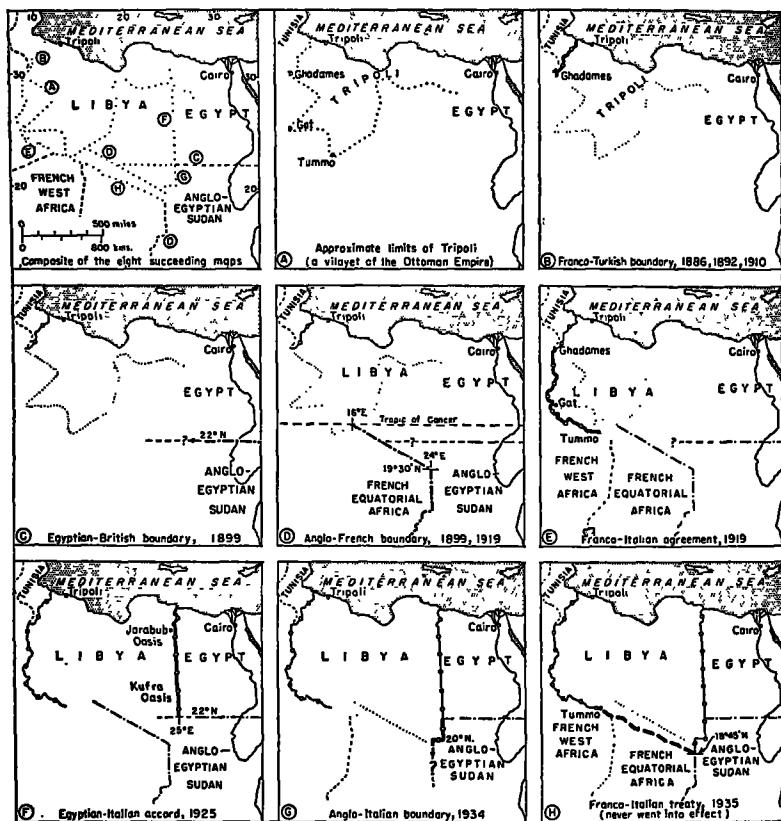


FIG. 20. THE BOUNDARIES OF LIBYA

of 24 degrees east longitude, but without stipulating a point of latitude on that meridian. Not until September 8, 1919, was the latitude of that point fixed at 19° 30' north. The boundary between Egypt and the Anglo-Egyptian Sudan had been defined by agreement, January 19, 1899, as the 22d parallel of latitude,

but no western terminus was fixed, since the western boundary of Egypt between Egypt and Turkish Libya was not definitely established—although the limits of Egypt were presumably defined on a map in connection with a firman of the Sultan of Turkey, signed February 13, 1841. Many maps of Africa, however, somewhat anomalously represented the southern boundary of Libya as comprising a portion of the Anglo-French diagonal boundary and the westward extension of the 22d parallel line. (The same tendency to supply missing boundaries in order to complete the map may be observed even on present-day maps of both North America and South America.)

The eastern and southern limits of Libya have been defined in recent years as follows: (1) by Italo-Egyptian accord of December 6, 1925, on the 25th meridian, except in the northern portion from the vicinity of the oasis of Jarabub (Giarabub) to the Mediterranean at the Bay of Solum; (2) by exchange of notes between Italy and Great Britain, July 20, 1934, the boundary continuing the 25th meridian south from 22 degrees to 20 degrees latitude, thence west to the 24th meridian, and thence south "as far as the junction with the frontier of French possessions";⁵ (3) by a treaty between Italy and France, January 7, 1935, which never became effective, but by which the boundary would have terminated on the 24th meridian at a point in 18° 45' north latitude.⁶

The Jubaland Boundary

By a treaty signed July 15, 1924, Great Britain ceded to Italy a considerable territory lying to the west of the Juba River (formerly the boundary between Kenya and Italian Somaliland), which is frequently named from the Italian viewpoint "Trans-Jubaland" ("Oltre Giuba"). The importance of water in desert country is illustrated in this boundary settlement. The boundaries of that ceded territory consist chiefly of a series of straight lines. The meridian portion of that boundary is thus defined:

⁵ See Cmd. 4694.

⁶ See Shaw, "International Boundaries of Libya," with full page map in colors.

in a south-westerly direction . . . to such meridian east of Greenwich as shall leave in Italian territory the well of El Beru; thence along the same meridian southwards until it reaches the boundary between the provinces of Jubaland and Tanaland; . . .

In the event, however, of it being found . . . that the well of El Beru does not contain water either sufficient or suitable for the maintenance at that point of an Italian frontier post, then the line, as between El Beru and Eilla Kalla, shall be so drawn by the Commission as to include in Italian territory the neighbouring well of El Shama.⁷

The fixing of the long meridian boundary therefore depended upon determining whether the well of El Beru was satisfactory for the purposes of maintaining an Italian frontier post at that point. The commission concluded that the well of El Shama, not that of El Beru, should define the longitude of that meridian boundary.⁸

The difficulties of maintaining a boundary in this type of country are illustrated by the following observations in an agreement between the local commissioners, August 27, 1930:

with a view to arranging the question of a permanent line of boundary demarcation between the territory of Colony of Kenya and that of Italian Somaliland, we, with a spirit of reciprocal cordiality, have agreed to the particular points of view and the issue of our discussion in the following terms:—

1. That the cutting of the forest on the boundary-line in a few places that was effected by the mixed Anglo-Italian Commission mentioned in Article 12 of the Treaty between His Britannic Majesty and his Majesty the King of Italy, signed in London on the 15th July, 1924, are no longer traceable by reason of the growth of vegetation;
2. That of the 29 principal beacons only four are in good condition, that is, two in the neighbourhood of Malca Rie, one at Diff and the other at Dar-es-Salaam;
3. That of the secondary beacons generally there is almost no further trace;
4. That the boundary thus badly defined is the cause of continual contention between the populations comprised in the respective

⁷ Cmd. 2194, p. 3.

⁸ King, "Work of the Jubaland Boundary Commission," p. 423.

Colonies and does not permit adequate surveillance, political and customs, on the part of the respective frontier authorities;

5. That with the aim of having a clear boundary division based on the obligations and rights of the respective Governments of Kenya and Italian Somaliland, whilst it is necessary and urgent to construct a wide track, visible, usable and durable and the principal beacons, it is not advisable to construct the secondary beacons, because these will always be destroyed either by nature or by wild animals.⁹

It was consequently agreed to recommend that a track four meters wide be constructed, 681 kilometers long from Malca Rie to Dar-es-Salaam.

Such track should be made by the cutting of arboreal and herbaceous vegetation, of grass and the extirpation of the residual roots so that it may become well cleaned and in a condition for easy and rapid later maintenance.¹⁰

The Anglo-Italian Somaliland Boundary

Another boundary consisting of a series of straight lines, one that illustrates some of the boundary problems in regions inhabited by nomadic tribes, is that between British Somaliland and Italian Somaliland. The boundary was defined by an Anglo-Italian protocol in 1894; a minor modification was subsequently made to include within Italian Somaliland the village of Banda Ziada on the coast of the Gulf of Aden. But not until 1929 was it agreed to demarcate the boundary.

The line traverses a region inhabited by nomadic Somalis, who move with their camels, sheep, and goats to any spot that provides good grazing. Somaliland has no flowing streams. The water of the wells and river-bed pools is bad in quality and deficient in quantity. In the hills there is fair grazing for a short time following rains. Part of the boundary is through hills as high as 1,800 meters. In such country the nomads can hardly be expected to remain on one side of a boundary unless there is an effective frontier force. The straight-line boundary is obviously unsatisfactory in such country, where a line adapted to

⁹ Cmd. 4231, Italy, No. 2 (1933), pp. 2-3.

¹⁰ *Ibid.*, p. 3.

the topography, to the water holes, and to the grazing necessities of the nomads' herds would function more smoothly. The aerial photographic surveying and mapping used on this boundary make it possible to obtain the necessary topographic detail in a country where a field party is difficult to maintain because of lack of water and problems of maintenance and transport. In fact, a photographic survey in such country, under favorable conditions, would make it feasible to fix a boundary adapted to physical features and human requirements, instead of a series of long straight lines.¹¹

RIVER BOUNDARIES

Apart from the Congo-Ubangi boundary between the Belgian Congo and French Equatorial Africa, comparatively few international boundaries in Africa follow rivers. Examples may be found on both the eastern and western frontiers of Liberia, portions of the Gold Coast and the Nigeria boundaries, in the Ruvuma River boundary between Tanganyika Territory and Mozambique, on portions of the southern boundaries of the Belgian Congo, and on both the northern and southern frontiers of the South-West Africa mandated territory.

The disunifying effect of a river boundary, as it affects the native tribes, has been noted even between two protectorates of the same European nation, as in the case of the Zambezi boundary between Northern Rhodesia and Southern Rhodesia. In a single ecological area certain incidental differences of administrations are reported to have made an observable impression. Differences in the tax rates and a prohibition of the right to carry firearms in Southern Rhodesia (field and garden crops thus being depredated by baboons and elephants) is causing native villages and farms in Southern Rhodesia to be appreciably less prosperous and orderly than those across the river in Northern Rhodesia.¹²

An instance of a boundary *parallel* to a river is afforded in the

¹¹ Stafford, "Anglo-Italian Somaliland Boundary," pp. 102-25.

¹² Keigwin, "Cambridge Expedition," pp. 259-60.

convention for the cession of a portion of the present Gambia colony to Great Britain by the native king of Barra in 1826. A strip of territory one geographical mile wide, sometimes known as the "ceded mile," on the right or north bank of the Gambia River, extending from the mouth for about twenty miles upstream, was included in the cession, thus granting to Great Britain this most important estuarine gateway.¹³

WATERSHED BOUNDARIES

In the early days of "blissful ignorance" of the topography, a number of African boundaries were defined by international agreement as following a watershed. Some of these watersheds are in swamps and some in other areas of such low relief that a traveler is unconscious of ascent and descent as he crosses the divide between major river systems. Comparing them with parts of the watershed boundary in the Andes between Argentina and Chile, problems of delimitation and demarcation and the desirability or undesirability of watershed boundaries, from the viewpoint of local populations and national administration, vary surprisingly. In other words, a watershed line may make an excellent international boundary in one area and may constitute a most objectionable frontier in another.¹⁴

Belgian Congo-Northern Rhodesia Boundary

"The frontier between the Independent Congo Free State and the British sphere to the North of the Zambezi" was defined by agreement between Great Britain and King Leopold II, on May 12, 1894.¹⁵ The western part of the boundary follows the watershed between the Congo and Zambezi rivers from the Angola frontier to the meridian of the point where the Luapula River issues from Lake Bangweolo. The boundary was not de-

¹³ Hertslet, *Map of Africa by Treaty*, Vol. 1, p. 9; see also Fitzgerald, *Africa*, p. 337. The Gambia protectorate is very much larger than the colony.

¹⁴ With reference to watershed boundaries in general and the problems associated with them, see Adami, *National Frontiers* with Appendix, "Practical Considerations in Regard to Frontiers When Defined by a Watershed, More Particularly as Applied to Western Europe," pp. 109-21.

¹⁵ See Hertslet, *Map of Africa by Treaty*, Vol. 2, p. 578; Article 1(b).

marked until after the World War. By 1934 forty-six pillars had been placed at unequal distances on this watershed line, more than 600 miles long. "While they themselves were very inconspicuous and difficult to locate in thickish bush, there was nothing more to show one on the ground how the boundary ran."¹⁰ Between Boundary Pillars 11 and 46, erected ten to thirty miles apart along all but the eastern end of the boundary, the country is extremely flat, and in most cases one's estimate of the position of the watershed might be quite a few miles in error.

The eastern end of the boundary, between Boundary Pillars 1 and 11 (varying from five to twenty-five miles apart), is hilly and much more cut up. Much of the eastern portion of the boundary is highly mineralized. To locate the boundary with precision became necessary about 1925 because the concession companies had difficulty in proceeding with their operations. Along a large part of the boundary, the watershed has been carefully located and a five-meter lane cut through the bush; main boundary pillars have now been erected at intervals of about five kilometers with intermediate or auxiliary pillars at intervals of about 500 meters. The boundary thus consists of a series of short straight lines between intervisible monuments.

Between Boundary Pillar 34 and the Angola frontier, the country is very flat, and the difficulty of locating the watershed was complicated by the presence of huge anthills which dot the country. Some of them are twenty feet high and thirty feet in diameter at the base and are covered by grass and bush. These anthills, however, provided convenient eminences on which to establish triangulation stations for the boundary survey.

The boundary survey has been connected with the 30th meridian arc of triangulation that has been nearly completed for the full length of Africa.

Difficulties caused by ignorance of geography are well illustrated in a certain portion of the Belgian Congo-Northern Rho-

¹⁰ Peake, "Northern Rhodesia-Belgian Congo Boundary."

desia boundary. The 1894 agreement contains these words: "the thalweg of the Luapula up to its issue from Lake Bangweolo. Thence it shall run Southwards along the Meridian of Longitude of the point where the river leaves the Lake. . . ." The Luapula River, however, does not flow from Lake Bangweolo at all. It is identical with the Chambezi River, which rises in the neighborhood of Abercorn and takes the name Luapula after flowing through the swamps to the south of Lake Bangweolo. The longitude of Boundary Pillar 1 on the Congo-Zambezi watershed, which had been erected by the Belgian Section of the Boundary Commission in 1914, has been accepted in lieu of the longitude of the nonexistent point of the issue of the Luapula from Lake Bangweolo; that meridian has been extended in reverse direction (i. e., from south to north) until it intersects the Luapula River, the thalweg of which is followed by the boundary to Lake Mweru.

Anglo-Egyptian Sudan-Belgian Congo Boundary

From the source of the Mbomu River (a northern affluent of the Ubangi), the boundary between the Belgian Congo and the Anglo-Egyptian Sudan follows the Congo-Nile watershed in a southeasterly direction.¹⁷ Part of this watershed between the Congo and the Nile is so flat and featureless that, according to verbal report, an American missionary at Aba twenty-five or more years ago, desirous of ascertaining whether certain property was situated on the Belgian or the Sudan side of the boundary, engaged native porters to carry water for several days and to pour it on the land in question. He found that the water established a rill emptying into a stream known as part of the Congo system and therefore that he was in the Belgian Congo.

To the north of the Mbomu River, the boundary between the

¹⁷ See Hertslet, *Map of Africa by Treaty*, Vol. 2: (1) Agreement between Great Britain and His Majesty King Leopold II . . . Relating to the Spheres of Influence . . . in East and Central Africa, Signed May 12, 1894, Article 1(a), p. 578; and (2) Declaration of the Neutrality of the Congo Free State, Dec. 28, 1894, pp. 557 ff.

Anglo-Egyptian Sudan and French Equatorial Africa likewise follows the Congo-Nile watershed northward, a little beyond 9 degrees north latitude.¹⁸

THE BACKBONE OF BOUNDARY SURVEYING AND MAPPING

The surveying and mapping so essential to modern boundary demarcation necessitate a network of precise geodetic triangulation providing a whole series of points, the latitude and longitude of which are fixed with great exactitude and to which boundary surveys, in common with many other surveys, may be tied. In a new continent like Africa, such geodetic triangulation is very important indeed in relation to the surveying, mapping, and demarcation of boundaries.

The backbone of such a triangulation system in Africa is the great survey known as the "arc of the 30th meridian," which extends from South Africa at Port Elizabeth northward and which closely approximates the meridian of 30 degrees east longitude all the way to Cairo.¹⁹ The lack of basic triangulation has occasioned countless boundary disputes all over the world and has made it impossible to provide good topographic maps for general use. To quote Sir David Gill, who originated the project of the 30th meridian arc of triangulation nearly fifty years ago:

There is one, and only one, remedy for all this, and that is to connect all detached surveys with a general system of triangulation—and it will save the Government and the inhabitants generally a vast amount of money to establish this triangulation as quickly as possible. . . . With the universal experience of the civilized world at my back I do not hesitate to say that it is waste and extravagance to postpone the commencement of a principal triangulation of your country.²⁰

¹⁸ Cmd. 2221, notes exchanged between the United Kingdom and France agreeing to the ratification of the protocol defining the boundary between French Equatorial Africa and the Anglo-Egyptian Sudan, together with the protocol (with two maps), London, Jan. 21, 1924; described in Sec. 1 of the protocol.

¹⁹ See Winterbotham and McCaw, "Triangulations of Africa," with three maps of African triangulations, the 30th meridian arc being shown on p. 27; see also Hotine, "East African Arc of Meridian."

²⁰ *Geog. Jour.*, Vol. 84, p. 230.

EFFECTS OF AFRICAN BOUNDARIES
UPON NATIVE PEOPLES

The system of international boundaries which has been imposed upon the continent of Africa, mostly within the last sixty years, has been transplanted from Europe by the colonial powers. The first step in European expansion in Africa was often the negotiation of treaties with native chiefs, who little comprehended what was implied. As the spheres of influence expanded and became colonies and protectorates with definite boundaries, the frontiers were frequently not adapted to tribal domains. Inasmuch as the permanent white population of almost all parts of Africa is very small, the manner and extent of the effects of the boundary upon the white peoples is relatively unimportant. If we inquire how the international boundaries function in Africa, therefore, the influence of the frontiers upon the indigenous peoples and their response to the placing of boundaries through their ancestral territories deserve primary consideration. Little that bears directly upon the subject has been published; available material is widely scattered.

Many manifestations of European influence and authority increasingly impress the native consciousness. Government officials, traders, prospectors, and missionaries penetrate more and more to the remote corners of the continent. Access continues to be quickened and made cheaper through extension of roads, railroads, and river-steamer and airplane services. Schools and hospitals, both government and missionary, are being built. The arm of the law is lengthening. Taxes must be paid; in some parts of Africa the natives are given serially numbered and dated tags (the shape being changed each year) punched with a hole, which makes them convenient for wear around the neck as evidence of payment of taxes for the current year.

The African natives have for centuries moved freely across what have now become the international boundaries. On the whole, very limited success has attended the effort to prevent the natives from crossing the frontiers, which are but little marked and administered in large parts of the continent; white

people, however, are required to cross only at specified frontier posts, usually great distances apart. Differences between adjacent European colonies in the taxes assessed, in levies of work or food, in limitations on hunting or fishing, in wages and economic opportunity, and in public health services and educational advantages tend to induce the native peoples to cross the international boundaries even when they would otherwise remain where they are. And again, local famine may impel tribal migration. But whatever the motive, whenever the African natives cross the boundaries (of which they are rapidly becoming conscious) if they travel far enough they find themselves in an area of foreign administration from which they may be required to depart.

Disregard for the integrity of tribal lands, even by the establishment of a boundary between two protectorates of the same European power, may introduce administrative interference hampering to native life, as is reported to be the case on the Rhodesian-Nyasaland frontier.²¹

Tanganyika Boundaries on the North and West

The straight-line boundary between Kenya Colony and Tanganyika Territory from a point near Mount Kilimanjaro to Lake Victoria traverses the domains of the Masai, who are therefore under two different administrations. That the Masai find such an arrangement quite incomprehensible is not surprising.²²

The shores of Lake Victoria are one of the most densely populated regions of Africa. Not only are the geographical conditions favorable, but stability is encouraged by native kingdoms, such as the Buganda and Bukoba, to the west of the lake, in which strong tribal discipline effectively restrained intertribal warfare before the advent of the white man. The boundary between the two mandated territories of Tanganyika and Ruanda-Urundi passes through this populous area (the population density is

²¹ Fitzgerald, *Africa*, p. 218.

²² *Ibid.*, p. 240. The boundary between the British and German spheres in East Africa was defined, from the coast to Lake Jipé and Mt. Kilimanjaro, by the agreement of July 25, 1893 (Hertslet, *Map of Africa by Treaty*, Vol. 3, pp. 911-12). From Lake Jipé to Lake Victoria, across the lake, and marching with Uganda to the Belgian Congo, the boundary was defined by the agreement of July 18, 1906.

more than 140 per square mile in Ruanda-Urundi),²³ and although it undertakes to respect tribal boundaries to a considerable extent, it complicates the situation for the native peoples.

West Africa

One of the best studies on the effect of the boundaries upon the native peoples is "Reshaping the Map of West Africa" by Derwent Whittlesey. He calls attention to the fact that the natural regions of West Africa are long, relatively narrow zones trending east-west—comprising, south of the broad Sahara, the Sahel, the Sudan, and the Guinea coast; whereas the pattern of culture (that is, the bounds of the European colonies and protectorates) cuts directly across the pattern of nature. As Professor Whittlesey phrases it:

The political boundaries, demarked antecedent to European occupation, have caused no serious friction among the ruling nations. For the indigenes these boundaries are imposed upon, and often cut across, tribal units which had grown up in adjustment with conditions of the natural environment. To be divided between opposed systems of government is itself vexatious. Trade and agriculture induce seasonal movements across some boundaries, and intensify the annoyance. For instance, thousands move into British Gambia from French territory to work on the peanut crop, and the northern boundaries of Gold Coast and Nigeria bisect regions which are both agricultural and commercial units. For trade with the outside world, French Niger is dependent upon the transportation facilities of British Nigeria, and pack trains and caravans traverse the boundary daily during the harvest season. In some cases tribes which the boundaries divide appear to be reuniting by concentrating on one side of the line. This dislocation of population overtaxes the resources of the chosen land and abandons equally useful territory to desuetude. Besides, it causes ill feeling between the European administrators concerned.

The obvious solution for this potentially dangerous tendency, rectification of the boundary, has been achieved only in the former German Togo, where the line between British and French mandates was drawn to conform in part to tribal boundaries. Attempts to make changes are generally blocked by administrative suspicious-

²³ Fitzgerald, *Africa*, pp. 247-48, 288.

ness. . . . At present the major political boundaries must be recognized as immature and therefore subject to stresses potentially dangerous.²⁴

British Somaliland-Ethiopia Boundary

The boundary between British Somaliland and Ethiopia was demarcated during the three-year period from January, 1932, to March, 1935. The reports of the commission engaged in the difficult task of identifying and marking on the ground, in imperfectly mapped country, a line previously defined only in text refer repeatedly to the native populations.²⁵ The area is one of little rainfall, and the nomadic Somalis graze their camels, Persian fat-tailed sheep, and goats in the more favored sections. The international boundary cuts across the rather well-established, though somewhat flexible, tribal areas, the limits of which overlap and dovetail in a confusing manner. Some of the territory traversed by the boundary is particularly valuable for grazing. The boundary agreement takes native interests into account in that it contains a trans-frontier grazing clause.

The tribes displayed a good deal of disapproval of the boundary, for they feared that it implied restrictions on their grazing and would not be persuaded to the contrary. Consequently a good deal of pillar destruction occurred. The Somaliland Government imposed—and collected—a considerable total in fines and rebuilt the pillars for whose maintenance they are responsible, and the trouble appears to have been checked.²⁶

An unusual piece of demarcation on this boundary was effected by scraping a path through the boulders and gravel on a certain section of the frontier. It is expected to give "a permanent result, for paths are rare and bad, and this will undoubtedly be used by man and animals; while its straight line and regular

²⁴ "Reshaping the Map of West Africa," pp. 141-42. See also Stebbing, "Encroaching Sahara," pp. 506-24 (note the map on p. 508); Fitzgerald, *Africa*, pp. 320 ff. (for example, see p. 338 with reference to the influence of the boundaries of the Gambia protectorate).

²⁵ See Clifford, "British Somaliland-Ethiopia Boundary."

²⁶ *Ibid.*, p. 296.

edges declare it to be artificial." This demarcation line shows up strikingly on the photograph reproduced on Plate VI.²⁷

Anglo-Egyptian Sudan Boundaries

The reports on the administration, finances, and condition of the Sudan ²⁸ not infrequently contain items relating to frontier administrations and meetings to settle disputes. For example, on the boundary between the Anglo-Egyptian Sudan and French Equatorial Africa, a frontier meeting between the Sudan and French officials on February 27-29, 1936, was attended by the two sultans and "a large number of notables from both sides of the frontier . . . Several important cases, involving large numbers of cattle, were settled by agreement and a number of smaller cases were settled by the chiefs themselves."²⁹

Anglo-Egyptian Sudan-Ethiopia boundary. The foothills of the Ethiopian mountain system extend to the Anglo-Egyptian Sudan frontier and in some places beyond it, along the boundary to the north of the ninth parallel of latitude. The boundary is demarcated and well known, but is objected to by the Watawit, ruling-caste inhabitants of Ethiopia adjacent to the frontier.

In the marshy terrain south of the ninth parallel the boundary is a river. On both banks tribesmen of Sudanese extraction, unhampered by external administrative restrictions, have been accustomed from time immemorial to wander with their cattle. The Anuak tribe is split by the boundary; the Nuer tribe, whose permanent settlements are in the Sudan, has been accustomed in the dry season to pasture its cattle in what is technically Ethiopian territory.³⁰

Anglo-Egyptian Sudan-Belgian Congo boundary. "A boundary court for the settlement of disputes between litigants from the Sudan and the Belgian Congo has continued to hold success-

²⁷ *Ibid.*, and Plate 8 facing p. 300.

²⁸ Published by the British government as "Command Papers."

²⁹ Cmd. 5575, p. 16.

³⁰ Report on the Finances, Administration and Condition of the Sudan in 1932, Cmd. 4387, pp. 16-17.

ful periodical sessions at Libogo. These meetings, which are arranged jointly by the District commission of Yei and the Administrateur of Faradje, also provide opportunities for trade and for the development of friendly intercourse between the inhabitants of both sides of the frontier."³¹

CONCLUSION

With reference to their location, the boundaries in Africa resemble those in the New World in that they apparently were established in ignorance of geographical conditions. However, greater geographical knowledge of the terrain existed than was the case when the American boundaries were first defined, and the lines represent haste because of a desire to define a boundary on paper, more than absence of knowledge. The belief that any boundary was better than none resulted in relatively little consideration of human factors in many instances.

In their economic significance, the boundaries in Africa somewhat resemble those in Asia, inasmuch as trade is chiefly from the interior to the coast and with other continents rather than across internal boundaries. But the boundaries in Africa are unique in the degree to which they concern indigenous populations who had no part in the boundary-making.

As economic development by European states increases in Africa, as communications, trade, education, and religion spread their influence, and as the boundary regimes are elaborated, differences of opportunity and differences of administrative policy are becoming more manifest on opposite sides of some of the boundaries. If this trend continues, boundary restrictions may become more onerous, and boundary problems may be intensified in the future. In so far as the sovereign powers regard their African colonies and protectorates as their exclusive preserve, each with a closed economy, the problems of administration and control will presumably multiply and dissatisfaction, both internal and external, will tend to increase.

³¹ Report on the Finances, Administration and Condition of the Sudan in 1928. Cmd. 3403, p. 18.

In climate and in natural resources, the continent of Africa is complementary to other regions, especially to Europe and the United States. As Africa prospers, it will in turn contribute to the well-being of the rest of the world. Liberalization of the boundary regimes and possibly some negotiated modifications of a few boundaries, both in the interests of the African peoples and of foreign commerce, would simplify the functioning of the boundaries of Africa in the future.

Chapter X

WATER BOUNDARIES¹

POLITICAL boundaries that pass through bodies of water within the territory of two or more nations or states present several interesting problems. No matter how complicated any land boundary may be, it can be marked throughout its entire course, and it is so marked whenever it becomes necessary. But water boundaries are characterized by peculiar problems, of both definition and demarcation. Definition of water boundaries is usually expressed in relation to their landward margins, and shore lines shift both vertically and horizontally, with melting snows, spring freshets, drought, or tides; furthermore, they migrate with erosion and accretion. Likewise, demarcation questions are peculiar, generally speaking, in part because it is seldom practicable to mark the turning points of boundaries in the water, and it is frequently not feasible to mark them on land by means of reference monuments and lights.

Modern political administration, however, demands a definiteness in all boundaries greater than was formerly required in rivers, lakes, and seas. If a question of national or state jurisdiction arises, it should be practicable to plot the position of any water craft, perhaps at the moment of an accident or a crime, on a chart on which the boundary is shown or on which it is feasible

¹ This chapter appeared as "Problems of Water-Boundary Definition: Median Lines and International Boundaries through Territorial Waters" in the *Geographical Review*, Vol. 27 (July, 1937), pp. 445-56, and is reproduced here by permission of the American Geographical Society. Practically no change has been made in the text, but the footnotes have been edited and some of the illustrations have been remade. Much has been written on river, lake, and other water boundaries; for example, Gidel's book on interior waters (see Bibliography), presenting the legal viewpoint. But little has been written on the specific problems involved in defining water boundaries, particularly the two types discussed in this chapter.

to determine the boundary in accordance with a clear and precise definition.

Many disputes concerning boundaries emerge from the limbo of needlessly ambiguous terminology. Fortunately, the treaty negotiator, the arbitrator, and the boundary commissioner have ready to hand sufficiently precise terms and concepts for most boundary types.

Concerning two types of water boundaries precise concepts appear not to have been developed, namely: (1) median-line boundaries in lakes and rivers; and (2) boundaries through territorial waters to the high sea. With reference to the first, an effort will be made to suggest a precise meaning of the term "median line"; with regard to the second, a type of boundary through territorial waters that is capable of general application will be suggested.

Much has been written about lake and river boundaries by eminent authorities.² And in the literature of boundary disputes and settlements, much is to be found in the testimony of experts and the opinions of learned judges.

Water boundaries in lakes, straits, and rivers are of several distinct types; generally they follow: (1) the shore,³ (2) the median line, (3) the navigable channel or thalweg,⁴ or (4) an arbi-

² For a discussion of boundaries in lakes, straits, and rivers, see Adami, *National Frontiers*, pp. 13-43; Fauchille, *Droit international public*, Vol. 1, pt. 2, pp. 246-85, 408-580; Lapradelle, *La Frontière*, pp. 199-210, 218-19.

³ Instances of international boundaries following lake shores are not numerous, but examples may be cited: the boundary between the British and German spheres of influence in Africa, by agreement of July 1, 1890, followed the shores of Lake Nyasa and Lake Jipé; the former Austro-Italian boundary in the Trentino followed the shore of Lake Idro for a short distance. Examples of boundaries following river banks include the Motagua and Tinto rivers (mean high-water mark on the right banks, Guatemala-Honduras arbitral award, 1933), the Morge and other streams south of Lake Geneva (French-Swiss convention, June 10, 1891), and the Sabine River (western bank, by United States-Spanish treaty, 1819, and United States-Mexican treaty, 1828, but subsequently transferred to the middle of the river).

⁴ Boundaries in navigable rivers and straits very commonly follow the thalweg, or navigable channel. The United States-Canadian boundary in the River St. Croix follows "the center of the main channel or thalweg" (treaty, Great Britain-United States, April 11, 1908, Article 2); the former Juba River boundary was in "the mid-channel (thalweg)" (protocol, Great Britain-Italy, March 24, 1891); the agreement between Great Britain and Germany, Feb. 23, 1901, respecting spheres of

trary geometrical line ⁵ such as a parallel of latitude or an azimuth line. Of these four types, the median line is least clearly defined at present.

MEDIAN-LINE BOUNDARIES

The median line is a concept relating to the horizontal plane (the navigable-channel concept relates to the vertical cross section). Various terms used in treaties, arbitral awards, and boundary-commission reports are presumably equivalent to the term "median line." The treaties between the United States and Great Britain, in 1783 and 1814, defined the boundary in the Great Lakes as "the middle" of the several lakes and water communications. The boundary in the Sabine River, according to the act of Congress admitting Louisiana as a state, 1812,⁶ was defined as "a line to be drawn along the middle of said river"; and the state of Texas was authorized to extend her eastern boundary from the west bank of the same river "so as to include within her limits one half of Sabine Pass, one half of Sabine Lake, also one half of Sabine River, from its mouth as far north as the thirty-second degree of north latitude" by act of Congress in 1848.⁷ The Guatemala-Honduras boundary follows the "median line" of a number of rivers and streams, including the Río Frío, the Quebrada Tecomapa, and the Río Managua.⁸ The

influence between Lakes Nyasa and Tanganyika provided: "In all cases where a river or stream forms a boundary the 'thalweg' of the same shall form the boundary; if, however, no actual 'thalweg' is to be distinguished, it shall be the middle of the bed." (On the definition of the "thalweg" see Haataja, "Questions Juridiques," pp. 9-15.)

⁵ Boundaries in lakes not infrequently follow geometrical lines: the boundary in Lake Victoria was made to follow "the first parallel of south latitude" (agreement, Great Britain-Germany, July 1, 1890); the United States-Canadian boundary in the Great Lakes comprises "a series of connecting straight lines defined by distances and courses," the commissioners under the treaty of April 11, 1908, Article 4, having been "authorized in their discretion" to adopt such a line in place of the curved lines adopted by the commission under Article 6 of the Treaty of Ghent.

⁶ 2 Stat. [Statutes-at-large] 702.

⁷ Approved July 5, 1848, 9 Stat. 245.

⁸ Special Boundary Tribunal (Guatemala-Honduras Boundary Arbitration), *Opinion and Award*, pp. 95-98.

German-Czechoslovakian boundary in watercourses in former German Silesia follows the middle line (*Mittellinie*).⁹

The geometrical definition of "median line" as it applies to a triangle is, of course, very simple: it is a line drawn from one vertex to the middle of the opposite side. Such a line bisects the area as well as the side of the triangle; in fact, the division into two equal areas seems to be an important element of the concept. But the median line as it applies to bodies of water, with their shore-line sinuosities and their tributary inlets, is less simple. Several concepts of the "median line" have been proposed.

The report of the International Waterways Commission on the location of the boundary line between the United States and Canada through Lake Erie, signed at Toronto, January 4, 1907, stated that the expression "the middle" of the lake may mean:

- (a) A line being at all points equally distant from each shore;
- (b) A line following the general lines of the shores and dividing the surface water area as nearly as practicable into two equal parts;
- (c) A line along the mid-channel dividing the navigable portion of the lake, and being at all points equally distant from the shoal water on each shore.¹⁰

These and other concepts of the median line will be considered not in the abstract but in the concrete, as applied to the map of Lake Erie made by the U.S. Lake Survey, Corps of Engineers, War Department.

Lake Erie as an example. We may examine first what might be called the landsman's or the shore-line viewpoint. It would perhaps seem reasonable to suppose that one might start with one of the shores of the lake and from successive points draw

⁹ The treaty of Jan. 31, 1930, Article 1, fixes the water boundaries as the *Mittellinie*, which is defined as a continuous line equidistant from the two shore lines. In case of doubt concerning the shore lines, the line of permanent grass (*ständiger Graswuchs*) or other characteristic evidences (*Merkmale*) shall be counted; if these are insufficient, the international boundary shall be the middle line of the expanse of water at low-water stage. (See *Reichsgesetzblatt*, Jan. 12, 1934, Pt. 2, No. 2.)

¹⁰ International Waterways Com., *Compiled Reports*, p. 578.

lines to the nearest point on the opposite shore; the line connecting the mid-points of each of these lines might be regarded as the median line of the lake. It would be a line of mid-distances measured from shore to shore. Figure 21, however, shows that this concept is quite impossible, even from one shore, and that the results from the opposite shores of the lake would be quite dissimilar.

As the second concept, we shall consider the second of the International Waterways Commission's hypothetical definitions. The idea of a median line that leaves one-half of the area on each side seems to be desirable. But, obviously, any number of lines lengthwise of the lake may be drawn, in which compensations are so made that the areas on the two sides of the line are exactly equal. A shift of the present Lake Erie boundary which transferred twenty square miles of water from the United States to Canada would result in exact equality of area for the two countries;¹¹ such a change could obviously be made anywhere. In other words, nothing is specific in such a definition.

The third concept is the third hypothetical definition of the International Waterways Commission. The idea of "a line along the mid-channel dividing the navigable portion of the lake, and being at all points equally distant from the shoal water on each shore" evidently can not be applied to Lake Erie, as there is no narrow channel of navigable water except among the islands at the western end. This definition would apply to many rivers and straits and to some lakes,¹² but it is more nearly the idea of the *thalweg* than a true median line. And taken as a whole it is not a precise definition in any sense.

As a fourth definition we shall consider the median line as the

¹¹ According to U.S. War Dept., Corps of Engineers, Survey of Northern and Northwestern Lakes: Bulletin No. 47 (1938), p. 341, the U.S. portion of Lake Erie including the Detroit River is 4,990 square miles, while the Canadian share is 4,950 square miles.

¹² Compare, for example, the northern end of the boundary between Finland and Norway in the Vuoremijoki; the treaty of April 28, 1924, stipulates that the frontier is "in the middle of the lakes formed by the river."

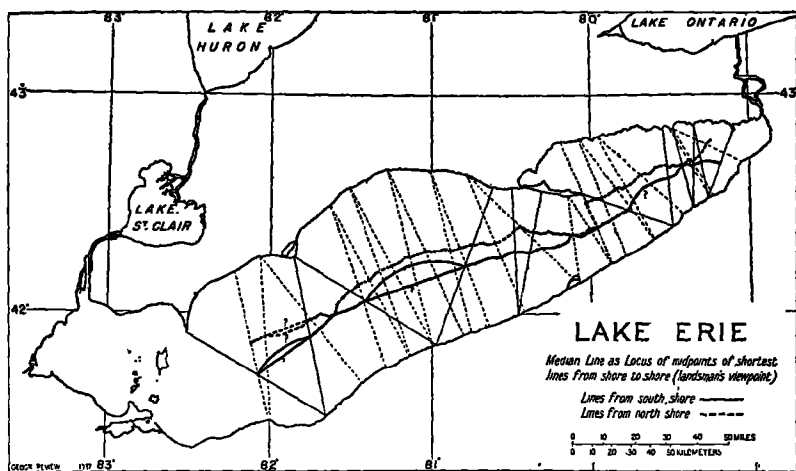


FIG. 21. AN IMPRACTICABLE CONCEPT OF THE MEDIAN LINE (A "LANDSMAN'S VIEWPOINT")

The median line is the locus of the midpoints of all lines drawn from points on one shore to the nearest point on the opposite shore. The line differs as it is drawn from the north or the south shore, the two versions only occasionally being coincident. Compare Fig. 22.

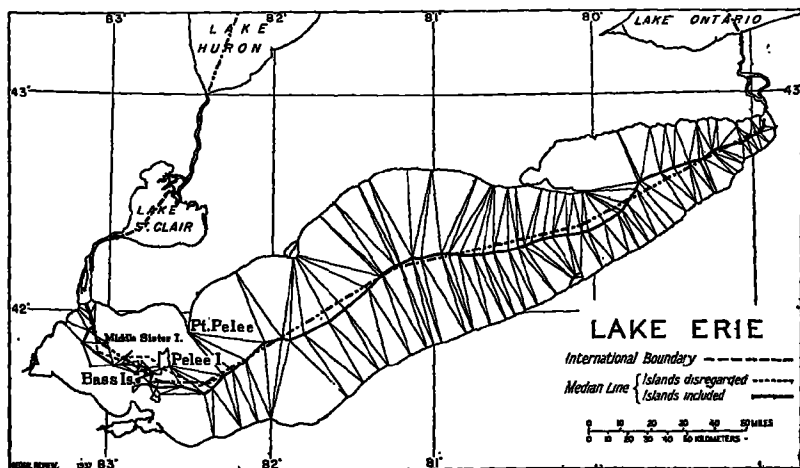


FIG. 22. THE MOST PRACTICABLE CONCEPT OF THE MEDIAN LINE

This is the line all points of which are equidistant from the nearest points on opposite shores. Such a line is continuous, and only one such line is possible.

line every point of which is equidistant from the nearest point or points on opposite shores of the lake, river, or strait. Figure 22 illustrates how such a line is constructed. Only one such line can be drawn, and this is therefore a precise definition. In laying down such a line on the chart, it is necessary to discover points which lie on the line by trial and error; but as regards any point in the lake, in order to find on which side of the median-line boundary it lies, it is necessary only to swing a compass from that point on the chart to opposite shores of the lake or river in order to ascertain which shore is the nearer and, therefore, on which side of the boundary the point is situated. Difficulties may be encountered in determining how to treat islands in a lake and in carrying the median line all the way to the end of a lake; but these difficulties are inherent in the problem of defining the median line and are not peculiar to the specific definition outlined above.

The geometrical principle is most readily perceived in studying parts of the lake where the shore irregularities are on a large scale, as in Lake Erie just east of Point Pelee. The median line, being equally distant from opposite shores, follows a straight line that is equally distant from two projecting points on the two shores until a third point that is equally distant is reached; then it usually proceeds in relation to one of the first two points and the new point. Each such straight line lies on the perpendicular that bisects the line connecting the two nearest points on opposite shores; in fact, the median line consists of a series of such straight lines, each of which is extended until it intersects the next. Geometrically such a median line is very simple. Actually it may display rather surprising irregularities, as in the western end of Lake Erie. But it must be remembered that the median line thus defined has a precise connotation. Indication of the boundary on published charts is therefore not essential, though it is desirable, and is practically essential if any modification of the strict median line of equidistance is adopted.

Island complications and other problems. With reference to

the problem of islands in a lake, it is suggested that if the sovereignty of the islands has not previously been determined and if it be desired to apply the principle of the median line in allocating them, the first step will be to develop a median line by ignoring the islands altogether, reckoning only from the main lake shores. Such a line may traverse one or more islands, but usually more than half of an island will lie on one side of such a line, which may be regarded as determining the allocation of the entire island. The allocation of all of the islands having thus been determined, a median line may then be finally drawn midway between the islands, or between islands and mainland, simply by developing a line equidistant from the nearest points of territory of the two sovereignties. On the chart of Lake Erie (Fig. 22) the median line at the western end of the lake, drawn by ignoring the islands, is shown as a dotted line; it results in assigning the islands to the United States and Canada very much as was done by the commission under Article 6 of the Treaty of Ghent, differing only in assigning the Hen and Chickens Islands to the United States rather than Canada. The median line that takes account of the islands is shown as a continuous line, as in the rest of the lake.

An illustration of the problem of prolonging the median line all the way to the end of a lake is afforded by Lake Michigan ¹³

¹³ Michigan was organized as a territory June 30, 1805, the western boundary extending "from the southern bend or extreme of Lake Michigan . . . through the middle of said lake to its northern extremity. . . ." (2 Stat. 309). The northern boundary of Indiana, by the enabling act approved April 19, 1816 (3 Stat. 289), eastwardly from the meridian of the town of Vincennes, follows "an east and west line, drawn through a point ten miles north of the southern extreme of Lake Michigan. . . ." The boundaries of the state of Illinois, by resolution approved April 18, 1818, extend in Lake Michigan east along the northern limit of Indiana "to the middle of Lake Michigan; thence, north along the middle of said lake, to north latitude forty-two degrees thirty minutes. . . ." (3 Stat. 429). Wisconsin was established as a territory by an act approved April 20, 1836, being "bounded on the east, by a line drawn from the northeast corner of the State of Illinois, through the middle of Lake Michigan, to a point in the middle of said lake, and opposite the main channel of Green Bay. . . ." (5 Stat. 10-11). These are all of the essential successive steps in the delimitation of the Lake Michigan boundary "through the middle of said lake," except for the question of the location of the northernmost point "opposite the main channel of Green Bay"; the boundary through Green Bay to the mid-

(Fig. 23). The southern end of the lake is asymmetrical in form, the axis trending to the west of south. As the median line is plotted on the chart, southwardly, it finally reaches a point that is nearer to a single point on the south shore than to any two points on opposite shores, to the right and left; a straight line to that point naturally completes the median line.

In defining a boundary that is to follow the median line in a lake, river, or strait, it should be remembered that the definition is not complete unless the shores or banks are defined by specifying the stage of the water, as "mean high water" or "mean low water."

The median line is less used as a boundary than formerly, so far as rivers are concerned.¹⁴ In lakes it is frequently the most desirable boundary; but in rivers and streams, particularly if navigable by any water craft, since about 1800 the boundary has more often been defined as "the line of greatest depth or the stream line of the fastest current, which is called in German 'thalweg.'"¹⁵

In order to give definite meaning to the term "median line" in the future, in treaties, boundary commission reports, and so forth, it might be advisable to insert a definition, such as "the median line being a line every point of which is equidistant from the nearest points on the shores of the two respective sovereignties; the shore line being the line of mean high water [mean low water, or other indicated stage of the water]."

BOUNDARIES THROUGH TERRITORIAL WATERS

The second type of water-boundary problem relates to the boundary between two nations or states, extending from the

dle of Lake Michigan was determined by the Supreme Court in a decree dated March 16, 1936 (297 U.S. 547-52). The boundary line in the middle of Lake Michigan is shown on various official maps, but unfortunately such maps do not agree with one another; an attempt is made in the illustration (Fig. 23) to apply to Lake Michigan the rigid definition of the median line which is herein proposed.

¹⁴ On this point see Adami, *National Frontiers*, pp. 15-20.

¹⁵ *Ibid.*, pp. 16-17; Haataja, *Questions Juridiques*, p. 8.

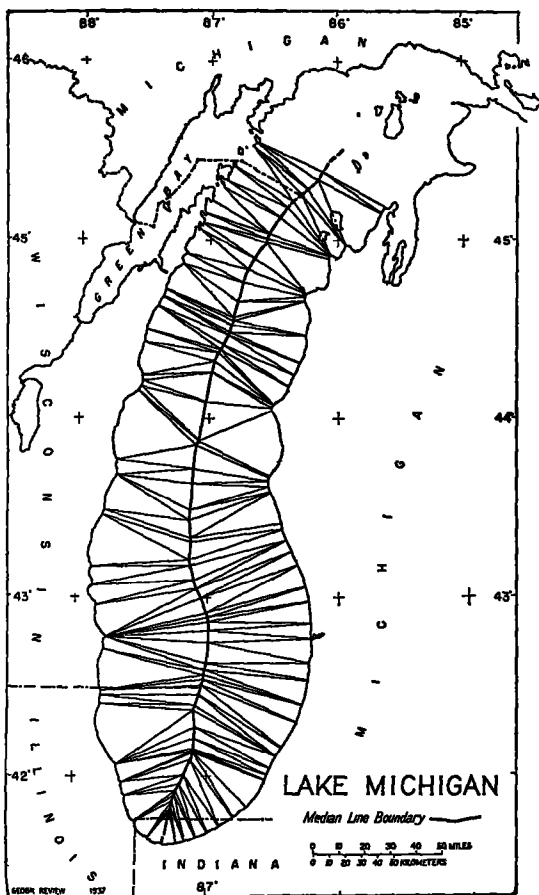


FIG. 23. THE MEDIAN LINE IN LAKE MICHIGAN

The drawing shows the line all points of which are equidistant from the nearest points on opposite shores. The Michigan-Wisconsin boundary in Green Bay and to the middle of Lake Michigan, according to the decree of the United States Supreme Court of March 16, 1936, is also shown (as a broken line).

coast through territorial waters to the high sea.¹⁶ Treaties, awards, and laws sometimes omit to define these boundaries, the line frequently being defined as if the boundary terminated at the coast.¹⁷

The desirability of defining the water boundary all the way to the high sea was expressed, for example, in the treaty between the United States and Great Britain, signed February 24, 1925; Article 3 observes:

And whereas it has been found by the surveys executed pursuant to the said Treaty of May 21, 1910, that the terminus of the boundary line defined by said Treaty at the middle of Grand Manan Channel is less than three nautical miles distant both from the shore line of Grand Manan Island in the Dominion of Canada and from the shore line of the State of Maine in the United States, and that there is a small zone of waters of controvertible jurisdiction in Grand Manan Channel between said terminus and the High Seas. . . .

The treaty therefore prescribed a single straight line, of specified length and direction, extending from the 1910 boundary terminus to the high sea (Fig. 24).

Two methods of delimiting the territorial waters between two contiguous states are described by Lapradelle.¹⁸

[A line] the direction of which will be determined with relation to the land boundary or with relation to the coast line.

In the first case, the maritime boundary line will be considered an

¹⁶ For a discussion of the boundary between territorial waters and the high sea (with illustrations), see Boggs, "Delimitation of the Territorial Sea."

¹⁷ The following examples of definitions of boundaries through the territorial waters to the high sea may be cited: decision of the Hague Permanent Court of Arbitration, Oct. 23, 1909, in the *Grisbadarna Case* between Norway and Sweden; report of the Delimitation Commission for the Denmark-Germany boundary, dated Sept. 3, 1921, in which was defined the water boundary both to the North Sea and the Baltic Sea, comprising a series of straight lines, the last of which in each instance extends "to the open sea"; the Italo-French boundary extends to a distance of three nautical miles and is marked by reference marks on the land (Italy. *Corpo di Stato Maggiore, Confini del Regno d'Italia*, Vol. 1: *Confine Italo-Francese*, pp. 220, 397-98).

¹⁸ Translated from Lapradelle, *La Frontière*, pp. 215-16. Adami states that the boundary through territorial waters is a "hypothetical line perpendicular to the coast starting at the point where the land boundary meets the sea." (Adami, *National Frontiers*, p. 50.)

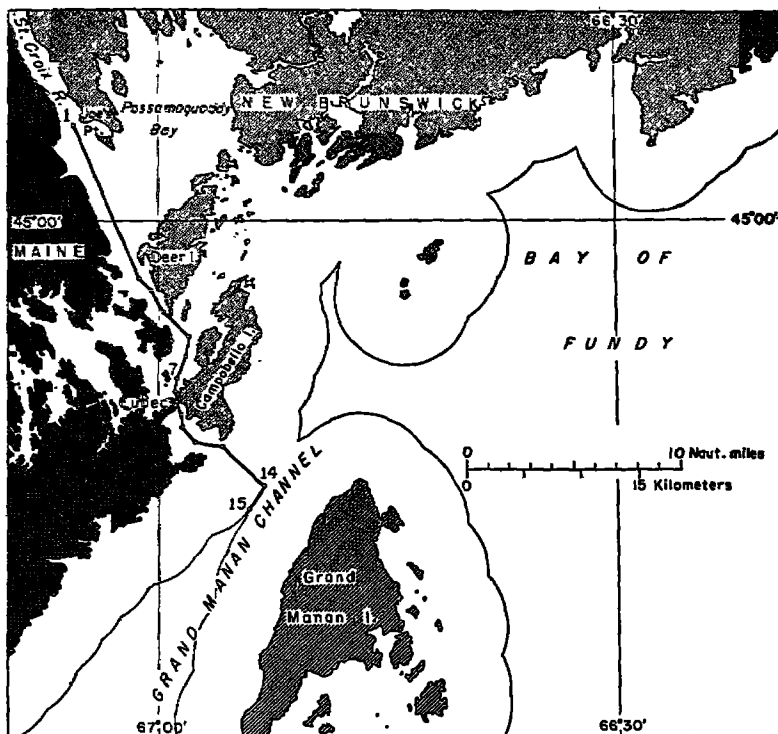


FIG. 24. AN EXAMPLE OF A PROPERLY COMPLETED WATER BOUNDARY

By treaty of February 24, 1925, the boundary between the United States and Canada was extended from the terminus established in 1910 in the middle of Grand Manan Channel. A single line was added, in a direction S $34^{\circ} 42' W$, a distance of 2,383 meters to the high sea, at a point three nautical miles from the nearest shores of American and Canadian territory.

extension of the land boundary [i.e., the last straight-line section of the land boundary], and will be traced in the same direction.

In the second case, the maritime boundary will be considered by itself, independent of the land boundary line, except at its point of contact with the coast. Its direction will be perpendicular to the general direction of the coast line.¹⁹

¹⁹ This was in effect the method applied in the award in the Norwegian-Swedish arbitration, in the Grisbadarna Case referred to. This method was re-

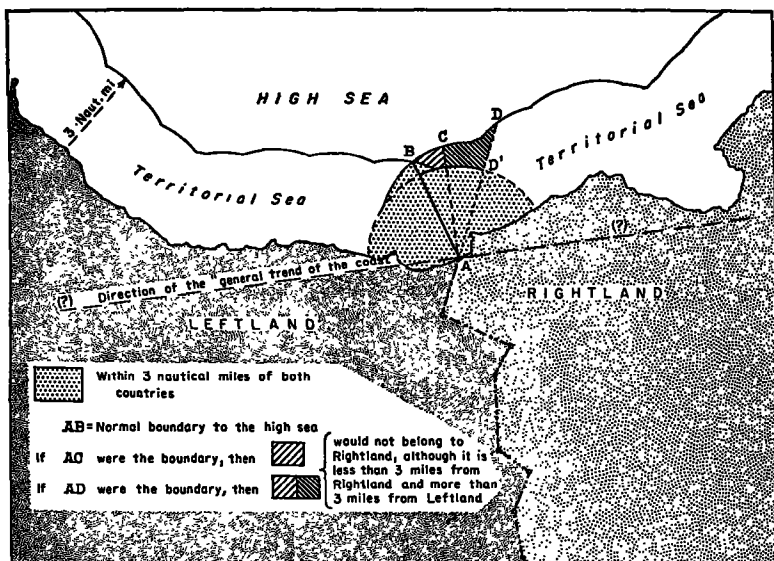


FIG. 25. THE INTERNATIONAL BOUNDARY THROUGH TERRITORIAL WATERS

The line passes through the belt of territorial waters (or "territorial sea") from the coastal terminus of the land boundary to the high sea. This is an example of the simple type, where there are no islands or highly irregular coast line. The most reasonable boundary is the line A-B, the point B being the intersection of the envelopes of arcs of three-mile radius drawn from all points on the shores of the two countries, "Leftland" and "Rightland" respectively.

Two other definitions of the international boundary are sometimes employed: (1) the extension of the last section of the land boundary (in this example, the line AD'), or (2) a line perpendicular to "the general trend of the coast" (along the line AC a distance of three miles). Both of these are objectionable, certain areas (ruled shading) being waters of controvertible jurisdiction.

Before considering the merits of these two methods it is desirable to study a typical situation graphically. The best way to visualize the problems involved in delimiting the territorial seas

garded as "much more in accord with the ideas of the seventeenth century" (the treaty of 1661). The award states: "The general direction of the coast, according to the expert and conscientious survey of the tribunal, swerves about 20° westward from due north," and the boundary was stipulated to be drawn in a direction west 19 degrees south (i. e., south 71 degrees west) "until it reaches the high sea." (*Hague. Permanent Court of Arbitration. Reports*, 1st Ser., pp., 129, 132-33.)

of contiguous countries is to describe, on a chart, the seaward limit of the territorial waters of each country as if the other did not exist. These limits will be the envelope of the arcs of circles of three nautical miles' radius drawn from all points on the respective coasts. The two curves will intersect at a point which may be exactly three miles, but is often more than that distance, from the terminus of the land boundary on the shore (see the point B on Fig. 25). This point of intersection of the curves is the normal terminus of the water boundary; it is a "triple point" in the boundary sense, being naturally the point at which three boundaries should meet; namely, the boundary between the territorial seas of the two contiguous countries and, for each of the two countries, the boundary between its territorial sea and the high sea.

It will now be observed that the two methods, cited above, of delimiting the international boundary through the territorial sea are both somewhat defective; they are illustrated on Figure 25 as the lines AC and AD. The continuation of the last land boundary section is open to the objection that it is usually accidental in direction, having no relation to the necessities of delimiting a water boundary. The second type of line is open to criticism because it is not always feasible to determine the general trend of the coast: how much coast should be taken into consideration for this purpose—a distance of three miles on each side of the land boundary, or five miles, or twenty miles? And how average the sinuosities so as to ascertain the general trend?

Boundaries delimited by both methods present further difficulties which are identical in character. On Figure 25 it will be seen that, if the boundary terminates at either C or D,²⁰ there

²⁰ Sometimes the boundary is not defined at terminating at the high sea, but at a point three nautical miles from the terminus of the land boundary. In many instances such a point is not on the high-sea boundary, because it is less than three miles from some nearer point on the shore. The Canal Zone boundary in the Bay of Panama is so defined in the convention of Sept. 2, 1914, Article 4, extending three miles from mean low-water mark at Punta Mala, in a direction South 72° 14' East. The end of that line is, however, only about 1.5 miles from the island of Perico and about 2 miles from the nearest point in the city of Panama; and it is approximately 1.6 nautical miles from the nearest point on the high

will be a zone of waters between AC or AD (as the case may be) and the line AB that needlessly constitutes a zone of waters of controvertible jurisdiction. These waters (shaded on the dia-

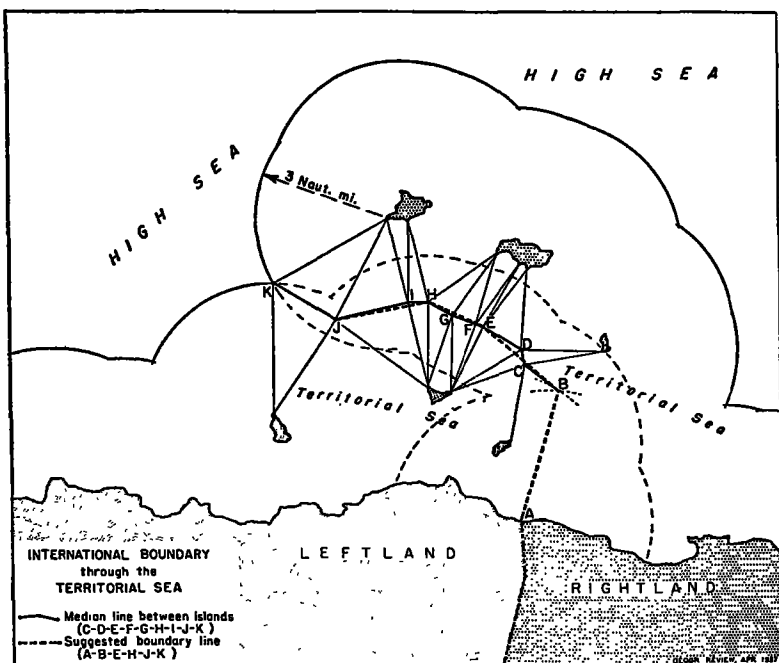


FIG. 26. A REASONABLE WATER BOUNDARY THROUGH AN ISLAND ZONE TO THE HIGH SEA

The line C-D-E-F-G-H-I-J-K is a median line between nearest points on the shores of the islands belonging to "Leftland" and "Rightland." A simpler line, A-B-E-H-J-K, approximating closely the median line, would constitute a reasonable boundary from the mainland coast through territorial waters to the high sea.

gram) do not belong to "Rightland" because they are to the left of the boundary; they should not belong to "Leftland" because they are more than three miles from its shores; and yet they are not part of the high sea because they are less than three miles from "Rightland."

sea—which is just 3 miles from the nearest land of both the Republic of Panama and the Canal Zone.

It seems clear, therefore, that the normal terminus of the territorial-sea boundary is that point which is three miles from the nearest land of the two sovereignties and that the simplest boundary through the territorial sea is a straight line ²¹ from the land boundary to that normal terminus at the high sea. Of course, sometimes a single straight-line boundary will not serve, but in such instances the boundary should probably constitute a series of straight lines the last of which should end at the normal high-sea terminus.

The boundary in Grand Manan Channel, defined by the 1925 treaty referred to above, illustrates this principle, although the line begins in the middle of the channel instead of at the terminus of a land boundary. Figure 24 shows how the high-sea terminus of the boundary was determined—by describing the three-mile limits of each country as if the other did not exist and taking the intersection point as the seaward end of the water boundary. Without explaining that this was the method employed, the treaty simply provided that the last section of this water boundary should be a line 2,383 meters in length extending in a direction south 34° 42' west from the terminus of the 1910 boundary.

Island complications. Only one further type of case in delimiting the boundary through the territorial waters of contiguous states remains, namely, that in which there are complications due to the existence of islands or of a highly irregular coast line. This is illustrated in Figure 26. In defining the first section of the boundary, beginning at the shore line, the best method apparently is to describe three-mile arcs from the two mainland coasts, ignoring the islands, and to take their intersection as the terminus of the first section of the boundary, AB. From that point the normal boundary line is one which is equidistant from the islands of the two sovereignties; in other words, it is con-

²¹ Lapradelle observes that in certain cases the last part of the land boundary is a river, and that, "in fact, the river does not really terminate at its mouth, but is extended into the sea: an exterior thalweg follows the interior thalweg." (Lapradelle, *La Frontière*, p. 217.) In such cases the boundary may well follow the center of the navigable channel.

structed on the chart exactly as the median line in a lake or river is constructed. If this line is more complicated than seems desirable, an arbitrarily simplified approximation may be decided upon.

Such a line terminates at the high sea at the natural "triple point" and is approximately equidistant from the land territory of the two states throughout its entire course. Except for the turning point nearest the mainland and the high-sea terminus, each turning point of the boundary is a point that is equidistant from three points of land. In defining the boundary, therefore: (1) each turning point may be defined by indicating the three points from which it is equidistant; (2) each turning point may be indicated by latitude and longitude; or (3) the line may be defined by directions and distances from the initial point. This method of delimiting and defining boundaries through the territorial sea is believed to be of general applicability in relation to international water boundaries from the coast line of contiguous states to the high sea.

Chapter XI

THE PEACEFUL SOLUTION OF BOUNDARY PROBLEMS

AGLARE as of klieg lights is playing upon international boundaries, and the attention of peoples is being focused upon boundary problems. Many of the problems are very complicated and not generally understood and are therefore easily misrepresented by slogans and catchwords which may have little bearing on the fundamental issues involved. Boundaries have been subjected to extraordinary pressures and stresses, and anxious millions have lived for years in dread of what may happen. The need for peaceful solutions of all boundary problems is manifest.

The disturbing influence of frontier questions is usually persistent, as recorded, for example, in the treaty of 1881 between Colombia and Venezuela in these words: “. . . being desirous to put an end to the question of territorial boundaries which, for the space of fifty years, has unsettled their relations of sincere friendship, and natural, ancient, and indispensable fraternity. . . .”¹ The “sincere friendship” of many nations has been clouded for years by boundary controversies.

The boundary problems that disturb relations between contiguous states have many origins. In the newer countries, where boundaries have not yet been precisely determined and where too little geography was known when the line was first defined, problems issue perhaps from unavoidably vague definition of the boundary or from delays in surveying and marking upon the ground astronomic boundaries that mean nothing until they

¹ Treaty between Colombia and Venezuela, Sept. 14, 1881; English translation, *British and Foreign State Papers*, Vol. 73, p. 1107.

are so marked.² Problems likewise arise in desires for access to the sea, to means of communication, or to source materials. Elsewhere boundary problems spring from local incidents which may expand into national issues unless promptly and effectually handled.

Where a territorial claim is definitely involved, there is most likely to be an appeal to history. In general, there is recourse to historical antecedents in relation to boundaries where friction has developed, and history is forgotten where the boundary operates smoothly and satisfactorily. In other words, the past is recalled chiefly when difficulties arise in the present functioning of the boundary and when dissatisfaction breeds trouble and leads to rationalization of the desire for some sort of relief and change.

That seemingly intolerable boundary situations are sometimes not the offshoot of local conditions should not be overlooked. They may be the result of policies adopted at the capital of one state or at the capitals of both states, perhaps with little appreciation of the human factors of the frontier populations.

Whatever the origin of a boundary problem, peaceful settlement is more necessary now than ever before. We are not here concerned with the means of peaceful solution of international disputes in general, but only with matters directly affecting the settlement of international boundary questions. The peaceful solutions of such questions may be grouped in three categories, which will be considered separately:

- (1) Peaceful settlement of disputes concerning boundaries which have not hitherto been precisely defined and demarcated;
- (2) Peaceful modification of boundaries already definitely established, concerning the location of which there is no dispute, the shift in the boundaries being made to the mutual advantage of both countries;
- (3) Peaceful solution of problems relating to established boundaries, by modification or simplification of their functions, but without shifting the boundaries themselves.

² See Russell, "Geography and International Boundaries," pp. 150-51; Holdich, *Boundaries in Europe and the Near East*, p. x.

BOUNDARIES THAT HAVE NOT BEEN
DEFINITELY ESTABLISHED

The definition of a boundary in words in a treaty or other agreement is little assurance that disputes will not arise regarding its application to the surface of the earth. Until a boundary commission has made a survey, erected monuments, and made a report (which may perhaps be accepted formally by the governments, by treaty or protocol), disagreement may occur regarding a surprising number of questions. If the boundary is described as following a river, questions may arise concerning the sovereignty of islands, or the course of the river at the time the treaty was negotiated, and whether or not the changes in course have occurred by avulsion or accretion; and in the absence of accurate maps or aerial photographs (as of the date of the treaty) there may be no sure means of ascertaining the earlier course of the river.

If the boundary follows a line in the mountains, disputes may arise concerning the location of the watershed line (perhaps in an area of interior drainage) or concerning the crest of the main range. Even a geometric or astronomic line may give rise to dispute, if an extended network of precise geodetic surveying, to which the boundary survey may be tied, is not already available.

Boundaries which have not been fixed upon the ground may, therefore, be the source of problems that may assume large proportions. The peaceful solution of such problems often requires treatment quite different from that of questions relating to boundaries definitely and indisputably established.

The procedures to which recourse may be had in boundary problems are the same as in other international difficulties. Direct negotiations between the two governments concerned are almost always tried first. If the gulf of misunderstanding is too great to be spanned by direct negotiations and if good relations are strained or interrupted, one or more third countries, through their respective departments of foreign affairs, may tender their good offices or may consent to mediate between the two countries directly concerned. Lastly, the disputant countries may re-

sort to arbitration, and undertake to find an arbitrator who is mutually acceptable and who will assume the responsibility.

For a third country to assume the obligations involved in exercising good offices, mediating, or arbitrating in a boundary dispute is sometimes a more thankless task than would be imagined. The feelings of people in both countries may have been aroused or may later be incited until the general conviction in each country is that a decision awarding less than that country claims is a denial of historic justice. The mediator or arbitrator consequently runs the risk of becoming unpopular in one or both countries which he has consented to serve. The refinement of detail involved, the infinite patience, tact, and skill required in keeping the disputant parties in a mood to continue negotiations or to accept decisions or concessions which are made in their own best interests are quite beyond the comprehension of the proverbial "man in the street." The task is easier and less hazardous if mediation or arbitration is undertaken by international action instead of by a single country and is rendered still simpler if the disputants agree to a minimum area or to a very restricted problem to be subject to mediation or arbitration. The importance of maintaining or restoring peace, however, in so far as it affects the general interests of the mediating or arbitrating power and of many other nations as well, may make it worth while to assume the risks entailed in tendering good offices or in accepting the role of mediator or arbitrator.

The almost infinite variety of boundary problems, the mass of topographic and human factors to be mastered in all their geographic complexity, and the legacy of historic associations corroborate the observation of Lord Curzon:

It would be futile to assert that an exact Science of Frontiers has been or is ever likely to be evolved: for no one law can possibly apply to all nations or peoples, to all Governments, all territories, or all climates. The evolution of Frontiers is perhaps an art rather than a science, so plastic and malleable are its forms and manifestations. . . .³

³ *Frontiers*, p. 53.



PLATE VII. COMMEMORATING PLACE ON INTERNATIONAL
BOUNDARIES

Left, above: Peace Arch at Blaine, Washington, on the British Columbia boundary; stone range mark at left of the arch *Left, below:* Peace Bridge across the Niagara River between Buffalo, New York, and Fort Erie, Ontario. *Photograph from the International Boundary Commission. Right:* The Christ of the Andes on the Argentina Chile boundary. *Photograph from Ewing Galloway.*

The question may well be asked, "What sort of man is qualified to settle a major boundary controversy?" This was asked of an eminent European statesman who has had wide experience on boundary commissions in Europe and the Near East. "The clever man," he replied, recalling his experience in dealing with politicians, military men, economists, geographers, and others in proposing and making boundary settlements; he observed that any specialist is likely to have a narrow point of view and to overemphasize certain factors instead of considering all the pertinent aspects of the problem.

For a peaceful solution of a difficult problem relating to an unsettled boundary, the wisdom of Solomon is often needed. With all the technical assistance that is available, to let the major decisions be made by one who tempers the legal and tangible factors with shrewd and human wisdom would be desirable. The acceptance of a decision relating to so vital a matter as a national boundary may depend upon confidence in the impartiality and integrity of character of an arbitrator or of commission members even more than upon competence in all of the relevant fields of technical knowledge.

Whoever finds himself called upon to settle a boundary dispute will experience difficulty in tapping the best literature for enlightenment and assistance. Much could be done to make available the best boundary literature. Something in the English language, covering the entire field, is greatly to be desired.⁴

⁴ Lapradelle, *La Frontière*, is probably the best general text and the best organized (except for the lack of an index); it treats systematically the various stages of delimitation, has a chapter on the frontier regime and appendices such as one of instructions to a boundary commission; it also contains a table of boundary arbitrations, 1714-1923. Adami, *National Frontiers*, likewise contains a wealth of material of practical importance in settling a boundary dispute; the footnotes in this volume and Lapradelle are unusually good. Moore, *Digest of International Law*, Vol. 1, pp. 615-766, is useful. For an excellent series of brief notes on international arbitrations, including a number of boundary arbitrations, see the section entitled "Instances of International Settlement Involving the Application of the Principle of International Arbitration," pp. 769-917 (covering the period 1783-1903) in Darby, *International Tribunals*; in the same volume see also (pp. 520-44) "Rules for International Arbitration" by Marquis Corsi.

PEACEFUL MODIFICATION OF ESTABLISHED
BOUNDARIES

Many serious problems concern definitely established and monumented boundaries the *location* of which arouses no dispute whatever. Some of those problems could be solved, or the situations could be ameliorated, if the boundary were shifted to another position. It is generally assumed that such boundary changes can not be made except by means of war. However, occasional modifications of established boundaries are made without the use or the threat of force but solely for the mutual advantage of the nations directly interested. A few instances are noted to point the way to other peaceful improvements in established boundaries.

We should pass over the numerous instances of minor rectifications of established boundaries, as they do not sufficiently involve the principle to which we refer. That such minor modifications be made, however, is important. France and Germany, for example, somewhat recently made certain rectifications in their boundary.⁵

A notable example of a peaceful boundary change is one made by Belgium and Portugal in their territories in Africa in 1927.⁶ As a part of a comprehensive adjustment of colonial questions, Portugal ceded to Belgium about one square mile of territory near the mouth of the Congo River adjacent to the port of Matadi in the Belgian Congo; this was to enable Belgium to enlarge its port facilities and to make feasible the construction of a railroad from Matadi to Leopoldville on the Congo. In exchange for that small but very important territory, Belgium ceded about 1,350 square miles of the Congo to enlarge the territory of Portuguese Angola, with certain understandings regarding Portuguese railroad building through that territory, on the line from

⁵ Treaty between France and Germany, signed Aug. 14, 1925, ratifications of which were exchanged May 15, 1928 (*Journal officiel de la republique française*, May 19, 1928, pp. 5555-81); Treaty between France and Germany signed Dec. 16, 1937 (*Reichsgesetzblatt*, Teil II, 1938, No. 33, Aug. 25, 1938, pp. 393-414, with sketch maps).

⁶ Convention of July 22, 1927.

Benguela, on the coast, to the Katanga region. In spite of the exceptional inequality of the areas, they were regarded as approximately of equal value, and both countries believed that they profited by this exchange of territory. This African territory, it is true, involved no complicating historical factors such as there are in Europe.

Another example taken from Africa is the modification of the eastern end of the boundary between Egypt and Anglo-Egyptian Sudan. By the treaty of 1899,⁷ the boundary followed the 22d parallel of north latitude eastward to the Red Sea. The astro-nomic line was found to cut across tribal territories; a zigzag line traversing the treaty boundary and known as the "administrative boundary," was therefore adopted, without treaty formality. This line is more commonly represented on maps, although some maps and atlases show the treaty line; occasionally a map shows both lines.

Modifications of their common boundary made by Turkey and Iran (Persia) afford another example of changes in a definitely fixed frontier. Here several villages have been exchanged to the mutual advantage of both countries.⁸

The exchange of territories effected by Bolivia and Peru in 1909 deserves special note.⁹ The arbitral award, which by the treaty between Bolivia and Peru, December 30, 1902, was to be without appeal, was rendered by President Figueroa Alcorta of Argentina, July 9, 1909. The area previously in dispute between the two countries was large, and the arbitral award fixed a compromise boundary which could have been demarcated as the definitive boundary of Bolivia and Peru. Desiring a different line, however, Bolivia and Peru followed a course worthy of emulation. They first accepted the award, by the Polo-Bustamante

⁷ Agreement between the British government and the government of the Khedive of Egypt, relative to the future administration of the Sudan, signed at Cairo, Jan. 19, 1899, Hertslet, *Map of Africa by Treaty*, Vol. 2, p. 620.

⁸ The boundary was definitely established in 1913-14. The changes were made in 1932 and relate to villages in three areas along the frontier. See "The Turkish-Iranian Boundary," *Geog. Jour.*, Vol. 91 (Jan., 1938), pp. 57-59, with map.

⁹ See *supra*, p. 84.

protocol of September 15, 1909, in which they stated "their entire satisfaction with the award." The line thereby became, in a real sense, an "established boundary." Two days later, by a protocol for the exchange of territories and the rectification of the frontier, they modified the boundary to their mutual satisfaction.¹⁰ That boundary, with minor adjustments, has since been demarcated.

The difficulties in making boundary modifications of appreciable magnitude in populated areas are usually so great as to preclude serious consideration. When the advantages in shifting the lines are manifest, the obstacles should come to be regarded as less formidable than they now appear; it is fortunate when there is a minimum of grandiose talk and a maximum of common sense and good will. If such changes are made when animosities have not been aroused, as they are by war, the people living adjacent to the line can usually adjust themselves without great difficulty to the new frontier, especially if the modification is in their interest.

THE SOLUTION OF BOUNDARY PROBLEMS WITHOUT BOUNDARY CHANGE

The insistent demand for modification of the boundary is, in some areas, based on the uncritical assumption that merely because the boundary is working unsatisfactorily, it could be made to function more smoothly if it were shifted to another position. The functions of the boundary have been taken for granted, and change of locus of the frontier is imagined as the only solution of the problem.

Seen in broad perspective, however, we have observed that the

¹⁰ The problem of establishing the Bolivia-Peru boundary in the period 1902-9 was complicated by contemporary developments relating to the Bolivia-Brazil and Brazil-Peru boundaries, with which we are not concerned here. For an account of the Bolivia-Peru arbitration and the 1909 protocols, with brief descriptions of the several boundaries and citations to documentary sources, see Ireland, *Boundaries, Possessions and Conflicts in South America*, pp. 103-7. For a convenient English translation of the arbitration treaty, the award, and the two 1909 protocols, see *British and Foreign State Papers*, Vol. 100, pp. 803-4, and Vol. 105, pp. 572-81. For a map showing the 1909 protocol line and the differences of the 1909 award line see Figure 12 *supra*, p. 83.

functions of boundaries vary greatly the world over and that they have passed through a long evolution and have, in fact, greatly changed within the last two or three decades, particularly in Europe. Change of boundary functions, chiefly by progressive simplification, offers the surest relief from many of the burdens associated with present boundaries the world over.

The steps taken in the direction of simplification of boundary functions have been wholly inadequate, especially in the post-war period in Europe. The existence of the need has been recognized, and attempts have been made in the direction of simplification of customs procedures, passport practices, communications and transit regulation, transmission of hydroelectric power, and so forth. The retrospective view shows how futile have been these efforts to stem the tide that had strongly set in toward proliferation of regulatory and restrictive practices.

If a stranger to our planet were to have explained to him how great are the boundary problems that harass mankind and if he were to visit a typical boundary and to observe how inconspicuous it is (almost imperceptible in many cases), he would probably be dumbfounded. He would doubtless inquire how such an artificial, man-made line could prevent men from visiting their friends and neighbors and from buying and selling goods to their obviously mutual advantage across these unfenced frontiers. He would miss the things that really divide—differences of language, traditions, and social organization, and an insufficiency of human understanding that transcends the narrow limitations of present international boundaries.

Solution of boundary problems without shifting the boundaries themselves may be effected in several ways, chiefly:

(1) By simplifying the regulations applying to a *single boundary*, through bilateral action—including the reduction of tariffs and the simplification of customs and passport formalities.

(2) By *regional* simplification of boundary functions, as for Europe or a large portion of the Continent, or for the Western Hemisphere as a whole.

(3) By formation of economic and other practical associations,

which may override one or more international boundaries and embrace parts of two or more nations, or entire continents, based upon whatever sort of regionalism is pertinent according to the problem or interest involved.

Wholehearted action in the direction of such integrations is needed in many parts of the world.

ADAPTING THE ROLE OF BOUNDARIES TO MODERN REQUIREMENTS

In common with economic and political problems of all sorts, questions relating to international boundaries are today of almost infinite complexity. The recurrence of war intensifies and perpetuates the boundary problems.

Boundaries will be changed by force as long as nations resort to war or the threat of war. A "war to end war" will not succeed. If there is ever to be a peace to end war it must be based upon local autonomy and world economy. These two objectives may seem unrelated, but they are as apposite as thumb and fingers and must be employed together if peace is to be grasped and held. Their achievement may be gradual and progressive, but their acceptance as objectives might be widespread when peace is restored.

The need of local autonomy creates demands for "self-determination" and makes enforced assimilation of linguistic and religious minorities almost futile. If regard for the separate capacities, feelings, and traditions of homogeneous communities and states is lacking, effective coöperation in the production and distribution of goods commensurate with present requirements is impossible. Until the necessity of working toward a world economy is recognized, to be initiated and promoted only by the voluntary coöperation of nations with a will to peace, power politics with periodic recourse to war may continue.

In suiting the role of boundaries to the requirements of a rapidly changing world, different adaptations are required to reconcile the interests of local autonomy and world economy. The first necessitates respect for homogeneous communities,

several of which may be included within a single customs union and may employ a common monetary system. The second requires general simplification of boundary functions, the lowering of many trade barriers, the production of goods where they can be produced most economically, and their exchange for goods which can be obtained advantageously elsewhere. In whatever way society may seek to establish local autonomy and world economy, it is unwise to transplant rigid concepts regarding such matters as boundaries and to attempt as if with a cookie-cutter to pattern the ideas of one continent upon those of another continent. Americans are likely to assume that their own simple type of federation could be applied without essential variation to any other part of the world. But the solution of world problems is not so easy. In the conduct of war, the closest adaptation to topography and other geographic factors has long been recognized as necessary. It should be appreciated that organization for lasting peace requires close adaptation to geographic factors—to the great differences in climate, soil productivity, and the distribution of mineral resources—as well as to human associations and traditions. As a corollary to such adaptation, the functions of boundaries should be regarded not as being uniform and static but as varying normally from place to place.

The number of active and incipient boundary disputes in various parts of the world in times of peace is greater than might be supposed. The problems involved in solving these controversies are complex and varied. In areas where there is friction on boundaries already established, the situation may be greatly eased, in perhaps all instances, either by peaceful shifting of the boundary for mutual advantage or by appreciably simplifying the functions which the boundaries are made to serve.¹¹

¹¹ The literature on boundaries needs to be supplemented to be of most use to those undertaking to solve boundary problems along the lines suggested above. There is little in the available literature regarding the functions of boundaries and their evolution, and little concerning the influence of boundaries upon the lives of people and the affairs of nations. An important contribution could be made through comprehensive studies embracing the social history of boundaries, the correlation of the workings of boundaries with pertinent geographic factors, and the peaceful solution of boundary problems.

One of the means of effecting peaceful solution of boundary problems is to nip in the bud each incipient dispute. Referring to the International Joint Commission, United States and Canada, Elihu Root characterized its work as "a signal illustration of the true way to preserve peace—by disposing of controversies at the beginning, before they have ceased to be personal and nations have become excited and resentful about them."¹² The state of Massachusetts has, for each city or town, two or more "fence viewers"¹³ whose duties relate to the maintenance of fences between private property; they act in cases of disputes relating to refusal or neglect to repair or rebuild partition fences, and the like. Officials or commissions with somewhat analogous duties might, perhaps, be appointed to pass upon boundary controversies between nations.

The peaceful solution of international boundary problems requires that the problems themselves be played down and that public emotions be not aroused. The men who act upon international boundary controversies need to shun publicity. Many people love almost any kind of a struggle, even a dog fight—at least as spectators. Scarcely any kind of controversy needs to be kept at low temperature, way below the boiling point, so much as an international boundary dispute.

In order that boundary problems may be amicably solved, every conceivable factor should be taken into consideration when new frontiers are to be established, and the best human wisdom should be applied in placing the boundary where it promises to function with least friction and to occasion a minimum of expense. Once the boundary has been established, the functions which it serves should be kept as simple and nonirritating as possible. Progressive simplification of boundary functions is needed in nearly all parts of the world in which boundary friction has developed. Finally, provision should be made for prompt, impartial, and wise handling of incidents and disputes that do arise.

¹² Burpee, "From Sea to Sea" (an article on the International Joint Commission), p. 27.

¹³ *Massachusetts General Laws* (1932).

APPENDICES

Appendix A

LENGTHS OF INTERNATIONAL BOUNDARIES

NOTE.—Except where indicated otherwise by footnotes, the following lengths of boundaries have been computed from measurements made on maps, by means of a measuring instrument which is adapted to follow very irregular courses of rivers and other features. The lengths have been measured in centimeters on maps of known scale, and the boundary lengths computed in kilometers, conversion to statute miles is made by multiplying the number of kilometers by 0.62137.

On meandering rivers and irregular mountain boundaries, especially in areas for which large scale accurate maps are not available, the lengths are presumably underestimated. However, except in the more densely populated regions, the minor meanders are of almost negligible significance so far as the local effect of the boundary is concerned. Since data have not been found regarding the lengths of most of the international boundaries, the following table apparently provides for the first time a set of figures which are approximately accurate and which are useful at least for purposes of comparison.

The scale of the map used in each case is stated in the first column, as a general rule, the larger the scale the more accurate the measurement. The scales range from a maximum of 1:50,000 to a minimum of 1:7,500,000.

EUROPE (as in 1937)

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Albania-Greece 1:50,000	260	162
Albania-Yugoslavia 1:50,000	480	298
Andorra-France 1:50,000	50	31
Andorra-Spain 1:500,000	60	37
Austria-Czechoslovakia 1:200,000	455	283
Austria-Germany ^a (566.5 km. land, 174.4 water)	741	460

^a Boundary length according to Germany. *Statistisches reichsamt. Statistisches Jahrbuch für das Deutsche Reich . . . 1937, p. 11.*

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Austria-Hungary 1:500,000	365	227
Austria-Italy 1:500,000	375	233
Austria-Liechtenstein 1:500,000	30	19
Austria-Switzerland 1:200,000	165	103
Austria-Yugoslavia 1:600,000	250	155
Belgium-France 1:240,000	550	342
Belgium-Germany ^a (140.4 km. land, 14.9 water)	155	96
Belgium-Luxemburg 1:240,000	130	81
Belgium-Netherlands (incl. 17 km. around outliers or exclaves) 1:240,000	445	277
Bulgaria-Greece 1:500,000	420	261
Bulgaria-Rumania 1:500,000	585	364
Bulgaria-Turkey 1:500,000	205	127
Bulgaria-Yugoslavia 1:100,000	495	308
Czechoslovakia-Germany ^a (1,238.0 km. land, 290.2 water)	1,528	949
Czechoslovakia-Hungary 1:200,000	685	426
Czechoslovakia-Poland 1:200,000	850	528
Czechoslovakia-Rumania 1:200,000	180	112
Danzig-Germany ^a (6.5 km. land, 78.4 water)	85	53
Danzig-Poland 1:100,000	145	90

^a Boundary length according to Germany. *Statistisches reichsamt*. Statistisches Jahrbuch für das Deutsches Reich . . . 1937, p. li.

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Denmark-Germany ^a (37.7 km. land, 32.6 water)	70	43
Estonia-Latvia 1:300,000	330	205
Estonia-USSR 1:200,000	280	174
Finland-Norway 1:1,000,000	880	547
Finland-Sweden 1:800,000	505	314
Finland-USSR 1:800,000	1,600	994
France-Germany ^a (239.2 km. land, 211.5 water)	451	280
France-Italy 1:500,000	440	273
France-Luxemburg 1:240,000	70	43
France-Spain 1:500,000	560	348
France-Switzerland 1:500,000	425	264
Germany-Lithuania ^a (15.8 km. land, 216.4 water)	232	144
Germany-Luxemburg ^a (6.2 km. land, 123.0 water)	129	80
Germany-Netherlands ^a (539.1 km. land, 89.9 water)	629	391
Germany-Poland ^a (East Prussia, 608.8 km.; other, 1,237.4 km.)	1,846	1,147
Germany-Switzerland ^a (183.8 km. land, 233.5 water)	417	259
Greece-Turkey 1:500,000	175	109
Greece-Yugoslavia 1:500,000	220	137
Hungary-Rumania 1:500,000	395	245

^a Boundary length according to Germany. *Statistisches reichsamt*. *Statistisches Jahrbuch für das Deutsches Reich* . . . 1937, p. li.

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Hungary-Yugoslavia 1:200,000	575	357
Irish Free State (Eire)-Northern Ireland 1:1,000,000	360	224
Italy-Switzerland 1:500,000	625	388
Italy-Yugoslavia (incl. Zara) 1:100,000	270	168
Latvia-Lithuania 1:400,000	470	292
Latvia-Poland 1:400,000	105	65
Latvia-USSR 1:400,000	260	167
Liechtenstein-Switzerland 1:500,000	40	25
Lithuania-Poland 1:300,000	435	270
Norway-Sweden 1:1,000,000	1,650	1,025
Poland-Rumania 1:400,000	300	186
Poland-USSR 1:750,000	1,150	715
Portugal-Spain 1:500,000	1,100	684
Rumania-USSR 1:400,000	750	466
Rumania-Yugoslavia 1:400,000	500	311
TOTAL EUROPE	27,933	17,357

ASIA ^b

Aden Protectorate-Yemen 1:253,440	320	199
Afghanistan-China 1:7,500,000	75	47

^b The lengths of the boundaries of the French and Portuguese possessions in India have not been included in this table.

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Afghanistan-India 1:1,000,000 and 1:4,000,000	2,330	1,448
Afghanistan-Iran (Persia) 1:1,000,000	880	547
Afghanistan-USSR 1:1,000,000	1,965	1,221
Bhutan-China (Tibet) 1:4,000,000	560	348
Bhutan-India 1:4,000,000	360	224
Burma-French Indo-China 1:1,000,000	250	155
Burma-Siam 1:1,000,000	1,800	1,118
China-French Indo-China 1:2,000,000	1,290	801
China-India (and Burma) 1:4,000,000	3,760	2,336
China-Nepal 1:4,000,000	880	547
China (incl. Manchuria)-USSR 1:1,680,000 and 1:840,000	9,600	5,965
French Indo-China-Siam 1:1,000,000	2,240	1,392
India-Iran 1:1,000,000	840	522
India-Nepal 1:1,000,000	1,520	944
Iran-Iraq 1:250,000 and 1:1,000,000	1,410	876
Iran-Turkey 1:250,000	500	311
Iran-USSR (excl. the Caspian Sea) 1:1,000,000	1,610	1,000
Iraq-Koweit 1:1,000,000	240	149
Iraq-Neutral Zone 1:1,000,000	190	118
Iraq-Palestine (Trans-Jordan) 1:1,000,000	145	90

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Iraq-Saudi Arabia 1:1,000,000	715	444
Iraq-Syria 1:1,000,000	600	373
Iraq-Turkey 1:50,000	375	233
Japan (Chosen)-Manchuria 1:1,000,000	970	603
Japan (Chosen)-USSR 1:1,000,000	15	9
Japan-USSR (in Sakhalin) 1:2,000,000	130	81
Malay States-Siam 1:760,320	505	314
Palestine-Egypt 1:1,000,000	220	137
Palestine (Trans-Jordan)-Saudi Arabia 1:1,000,000	740	460
Palestine-Syria (incl. Trans-Jordan-Syria) 1:1,000,000	500	311
Saudi Arabia-Koweit 1:1,000,000	265	165
Saudi Arabia-Neutral Zone 1:1,000,000	200	124
Saudi Arabia-Yemen 1:7,500,000	375	233
Syria-Turkey 1:1,000,000	650	404
Turkey-USSR 1:250,000	535	332

BOUNDARIES IN THE EAST INDIES

British Borneo-Netherlands Borneo 1:1,000,000	1,475	917
Netherlands Timor-Portuguese Timor 1:250,000	230	143
Netherlands New Guinea-Australian New Guinea (incl. mandated terr.) 1:4,000,000	760	472
TOTAL ASIA	42,025	26,113

AFRICA

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Anglo-Egyptian Sudan-Belgian Congo 1:1,000,000	570	354
Anglo-Egyptian Sudan-Egypt 1:1,000,000	1,260	783
Anglo-Egyptian Sudan-Eritrea and Ethiopia 1:1,000,000	2,220	1,380
Anglo-Egyptian Sudan-French Equatorial Africa 1:1,000,000	2,370	1,473
Anglo-Egyptian Sudan-Libya 1:1,000,000	470	292
Anglo-Egyptian Sudan-Uganda and Kenya 1:1,000,000	685	426
Angola-Belgian Congo (incl. Cabinda- Belgian Congo) 1:1,000,000	2,390	1,485
Angola (Cabinda)-French Equatorial Africa 1:1,000,000	185	115
Angola-Northern Rhodesia 1:1,500,000	1,080	671
Angola-Southwest Africa mandated terr. 1:1,500,000	1,335	830
Belgian Congo-French Equatorial Africa 1:1,000,000	2,940	1,827
Belgian Congo-Northern Rhodesia 1:2,000,000	1,960	1,218
Belgian Congo-Tanganyika Terr. (Ruanda-Urundi mandated terr., and bdy. in Lake Tanganyika) 1:1,000,000	1,085	674
Belgian Congo (incl. Ruanda-Urundi)- Uganda 1:1,000,000 and 1:2,000,000	890	553
British Somaliland-Ethiopia and Italian Somaliland 1:1,000,000	1,180	733

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
British Somaliland–French Somaliland 1:1,000,000	65	40
Egypt–Libya 1:1,000,000	1,115	693
Eritrea–French Somaliland and Ethiopia–French Somaliland 1:1,000,000	420	261
Ethiopia–Kenya and Italian Somaliland– Kenya 1:1,000,000	1,460	907
Gambia–Senegal 1:1,000,000	750	466
Gold Coast–French West Africa (Ivory Coast, Upper Volta, French Togo mandate) 1:1,000,000	1,985	1,233
Ifni–French Morocco 1:1,000,000	105	65
Liberia–French West Africa (Ivory Coast, French Guinea) 1:250,000	1,045	649
Liberia–Sierra Leone 1:250,000	265	165
Libya–Algeria and Libya–French West Africa (to Tummo) 1:5,000,000	1,350	839
Libya–French West Africa (from Tummo) and Libya–French Equatorial Africa 1:5,000,000	1,125	699
Libya–Tunisia 1:1,000,000	470	292
Mozambique–Nyasaland, Northern Rho- desia, Southern Rhodesia, Union of South Africa, and Swaziland 1:2,000,000 and 1:1,000,000	3,490	2,169
Mozambique–Tanganyika Terr. 1:1,000,000	770	478
Nigeria–French Cameroon mandated terr. 1:1,000,000	1,635	1,016

LENGTHS OF BOUNDARIES

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<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Nigeria-French West Africa (incl. bdy. in Lake Chad)	2,205	1,370
1:1,000,000		
Portuguese Guinea-French West Africa (Senegal, French Guinea)	715	444
1:500,000		
Rio de Oro-French Africa (Morocco, Algeria terr., Mauritania)	2,005	1,246
1:1,000,000		
Rio Muni-French Equatorial Africa (Cameroon mandate, Gabon)	490	305
1:1,000,000		
Sierra Leone-French Guinea	630	391
1:1,000,000		
Spanish Morocco-French Morocco	500	311
1:400,000		
Spanish Morocco-Tangier international zone	55	34
1:100,000		

INTERNATIONAL BOUNDARIES WITHIN THE BRITISH COMMONWEALTH OF NATIONS

Basutoland-Union of South Africa	760	472
1:2,000,000		
Swaziland-Union of South Africa	420	261
1:2,000,000		
Union of South Africa (incl. Southwest Africa mandated terr.)-Northern Rhodesia, Bechuanaland Protectorate, and Southern Rhodesia	1,690	1,050
1:2,000,000		
TOTAL AFRICA	46,140	28,670

NORTH AMERICA

(Including Central America and the West Indies)

Alaska-Canada °	2,480	1,541
Canada-United States °	6,440	4,001

° Data supplied by the United States Commissioner, International Boundary Commission, United States-Canada and Alaska-Canada.

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Mexico-United States ^d	3,065	1,905
British Honduras-Guatemala 1:1,000,000	265	165
British Honduras-Mexico 1:1,000,000	250	155
Canal Zone-Panama 1:1,000,000	200	124
Costa Rica-Nicaragua 1:1,000,000	300	186
Costa Rica-Panama 1:1,000,000	315	196
Dominican Republic-Haiti 1:820,000	275	171
El Salvador-Guatemala 1:1,000,000	145	90
El Salvador-Honduras 1:1,000,000	315	196
Guatemala-Honduras ^e 1:1,000,000	260	162
Guatemala-Mexico 1:1,000,000	905	562
Honduras-Nicaragua 1:1,000,000	810	503

INTERNATIONAL BOUNDARY WITHIN THE BRITISH
COMMONWEALTH OF NATIONS

Canada-Newfoundland (Labrador) 1:3,801,600	2,375	1,476
TOTAL NORTH AMERICA	18,400	11,433

SOUTH AMERICA

Argentina-Bolivia 1:1,000,000	820	510
Argentina-Brazil 1:1,000,000	1,030	640
Argentina-Chile 1:1,000,000	5,255	3,265

^d Data supplied by the United States Commissioner, International Boundary Commission, United States-Mexico.

^e *Informe detallado de la Comisión Técnica de Demarcación de la Frontera entre Guatemala y Honduras*, 1937, p. 205.

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Argentina-Paraguay 1:2,500,000	1,500	932
Argentina-Uruguay 1:600,000	540	336
Bolivia-Brazil 1:1,000,000	2,710	1,684
Bolivia-Chile 1:1,000,000	835	519
Bolivia-Paraguay 1:2,000,000	750	466
Bolivia-Peru 1:1,000,000	1,000	621
Brazil-British Guiana 1:1,000,000	1,200	746
Brazil-Colombia 1:1,000,000	1,330	826
Brazil-French Guiana 1:1,000,000	670	416
Brazil-Paraguay 1:2,750,000	1,000	621
Brazil-Peru 1:1,000,000	2,100	1,305
Brazil-Surinam 1:1,000,000	330	205
Brazil-Uruguay 1:1,000,000	800	497
Brazil-Venezuela 1:1,000,000	1,480	920
British Guiana-Surinam 1:1,000,000	725	450
British Guiana-Venezuela 1:1,000,000	650	404
Chile-Peru 1:255,000	170	106
Colombia-Ecuador 1:2,000,000	380	236
Colombia-Panama 1:1,000,000	230	143
Colombia-Peru 1:2,000,000	1,500	932

<i>Boundary</i>	<i>Kilometers</i>	<i>Statute Miles</i>
Colombia-Venezuela 1:1,000,000	2,000	1,243
Ecuador-Peru ^f	1,000	621
French Guiana-Surinam 1:1,000,000	510	317
TOTAL SOUTH AMERICA	30,515	18,961

SUMMARY

Europe	27,933	17,357
<i>Europe west of the USSR</i>	23,893	14,846
Asia	42,025	26,113
<i>Asia except the USSR</i>	28,170	17,505
Africa	46,140	28,670
<i>Africa, omitting bdies. of the Union of South Africa with other British territories</i>	43,270	26,887
North America	18,400	11,433
<i>North America, omitting the Can- ada-Labrador bdy.</i>	16,025	9,957
South America	30,515	18,961
TOTAL	165,013	102,534

^f Boundary not delimited; rough estimate of probable length.

UNITED STATES-CANADA BOUNDARY-Continued

<i>Treaties, awards, commission decisions, etc.</i>	Note	(A) <i>Passamaquoddy Bay. 1</i>	(B) <i>St. Croix R. 1</i>	(C) <i>"North Line." 2</i>	(D) <i>St. John R-Highlands. 2</i>	(E) <i>Halls Stream. 2</i>	(F) <i>45th Parallel. 2, 3</i>	(G) <i>St. Lawrence & 3 Lakes. 4, 5</i>	(H) <i>Lake Superior. 4, 7</i>	(J) <i>Pigeon R.-Lake of Woods. 6, 7</i>	(K) <i>49th Parallel E of Rocky Mts. 8, 9</i>	(L) <i>49th Parallel W of Rocky Mts. 8, 10</i>	(M) <i>Gulf of Georgia to Pacific. 11</i>
1798, Oct. 25 Declaration of Commissioners under Art. 5 of Jay Treaty	28		29										
1814, Dec. 24 Treaty of Ghent	30	31 Art. 4		32 Art. 5	32 Art. 5	32 Art. 5	32 Art. 5	33 Art. 6	34 Art. 7	34 Art. 7			
1817, Nov. 24 Decision of Commissioners under Art. 4 of Treaty of Ghent	35	36											
1818, Oct. 20 Convention respecting fisheries, boundary, and restoration of slaves	37											38 Art. 2	39
1822, April 13 Separate reports of Commissioners under Art. 5 of Treaty of Ghent	40			41 42	41	41	41						

1822, June 18 Declaration of Commissioners under Art. 6 of Treaty of Ghent	43	44	
1827, Aug. 6 Convention continuing in force Art. 3 of Convention of Oct. 20, 1818	45		46 46
1827, Sept. 29 Convention for arbitration of Northeastern Boundary Ques- tion	47	48 48 48	48
1827, Dec. 24 Final reports (separate) of Com'r's under Art. 7 of Treaty of Ghent	49		50 50
1831, Jan. 10 Award of King of the Nether- lands in Northeastern Bound- ary Question	51	52 52 52	52
1842, Aug. 9 Webster-Ashburton Treaty	53	54 54 54 Art. 1 Arts. 1 Arts. 1 & 6 & 6 & 6	55 55 Art. 2 Art. 2
1846, June 15 Oregon Treaty (Art. 1)	56		57 57

UNITED STATES-CANADA BOUNDARY--Continued

63	(M) Gulf of Georgia to Pacific. 11
65	(L) 49th Parallel W of Rocky Mts. 8, 9
	(K) 49th Parallel E of Rocky Mts. of Woods. 6, 7
	(J) Pigeon R.-Lake 4, 7
	(H) Lake Superior. 3 Lakes. 4, 5
	(G) St. Lawrence & 45th Parallel. 2, 3
	(E) Halls Stream. 2
	(D) St. John R.-Highlands. 2
	(C) "North Line." 2
	(B) St. Croix R. 1
	(A) Passamaquoddy Bay. 1
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1873, March 10 Protocol of conference respecting Northwest Water Boundary	66								
1892, July 22 Convention for delimiting boundaries not permanently marked (Art. 2)	68	69							
1908, April 11 Convention providing for more complete definition and demarcation of boundary	70	71	72	73	73	73	73	74	74
		Art. 1	Art. 2	Art. 3	Art. 3	Art. 3	Art. 3	Art. 4	Art. 4
								Art. 5	Art. 6
									Art. 7
									Art. 8
1909, Jan. 11 Treaty concerning boundary waters and establishing International Joint Commission	79								
1910, May 21 Treaty concerning boundary in Passamaquoddy Bay	80	81							
1925, Feb. 24 Treaty to complete boundary and maintain demarcation	82	83						84	85
		Art. 3						Art. 1	Art. 2

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NOTES TO THE TABLE RELATING TO THE UNITED STATES- CANADA BOUNDARY

1. This section of the boundary is covered by: International Boundary Com., U.S. and Canada, *Report . . . Source of the St. Croix River to the Atlantic Ocean*; regarding the history of surveys and demarcation see pp. 28-33, 142-58.
2. This section of the boundary is covered by: International Boundary Com., U.S. and Canada, *Report . . . Source of the St. Croix River to the St. Lawrence River*; regarding the history of surveys and demarcation see pp. 20-27, 274-94, 322-34. Regarding the boundary as now demarcated see also Miller, *Treaties*, Vol. 4, pp. 413-14.
3. Regarding the history of the 45th parallel as a colonial and state boundary since about 1614, see Lawrence Shaw Mayo, "The Forty-fifth Parallel: a Detail of the Unguarded Boundary," *Geog. Rev.*, Vol. 13 (April, 1923), pp. 255-65.
4. This section of the boundary is covered by: International Waterways Com., U.S. and Canada, *Report . . . St. Lawrence River and Great Lakes*.
5. With reference to the existing boundary in the St. Lawrence River and Lakes Ontario, Erie, and Huron, see also Miller, *Treaties*, Vol. 3, pp. 74-75.
6. With reference to the boundary as now demarcated, from the foot of Neebish Rapids, through Lake Superior, to the Lake of the Woods, see also Miller, *Treaties*, Vol. 4, pp. 426-28; regarding the northwesternmost point of the Lake of the Woods see *ibid.*, pp. 428-32.
7. This section of the boundary is covered by: International Boundary Com., U.S. and Canada, *Report . . . Northwesternmost Point of Lake of the Woods to Lake Superior*; regarding the history of surveys and demarcation see pp. 25-28, 213-19, 197-206.
8. This section of the boundary is covered by: International Boundary Com., U.S. and Canada, *Report . . . Gulf of Georgia to the Northwesternmost Point of Lake of the Woods*; regarding the history of surveys and demarcation, see pp. 29-33, 194-217. With regard to the boundary as now demarcated see also Miller, *Treaties*, Vol. 5, pp. 100-101.
9. For this section see also C. O. Paullin, "The Early Choice of the 49th Parallel as a Boundary Line," *Canadian Hist. Rev.*, Vol. 4 (1923), pp. 127-31.
10. For this section see also Otto Klotz, "The History of the Forty-

- ninth Parallel Survey West of the Rocky Mountains," *Geog. Rev.*, Vol. 3 (May, 1917), pp. 382-87.
11. This section of the boundary is covered by: International Boundary Com., U.S. and Canada, *Joint Report upon . . . the Boundary . . . from the Western Terminus of the Land Boundary along the Forty-ninth Parallel, on the West Side of Point Roberts, through Georgia, Haro, and Juan de Fuca Straits, to the Pacific Ocean* (Washington: Government Printing Office, 1921). See also Sen. Ex. Doc. No. 29, 40th Cong., 2d Sess. (1868); 270 pages, with maps. With regard to the boundary as now demarcated see also Miller, *Treaties*, Vol. 5, pp. 100-101.
 12. Miller, *Treaties*, Vol. 2, pp. 96-100; notes, pp. 101-7.
 13. The 1782 preliminary articles of peace and the 1783 treaty of peace did not mention Passamaquoddy Bay and did not define any boundary line from the mouth of "the River St. Croix . . . in the Bay of Fundy" to the Atlantic Ocean. It was merely provided that the boundary of the United States should comprehend "all Islands within twenty Leagues of any Part of the Shores of the United States, & lying between Lines to be drawn due East from the Points where the aforesaid Boundaries between Nova Scotia on the one Part and East Florida on the other, shall respectively touch the Bay of Fundy and the Atlantic Ocean, excepting such Islands as now are or heretofore have been within the Limits of the said Province of Nova Scotia."
 14. Defined as "a Line to be drawn along the Middle of the River St. Croix, from its Mouth in the Bay of Fundy to its Source."
 15. The boundary description began at the north end of that portion of the boundary which was subsequently called "the North Line"; in the language of the treaty that point is defined in the following terms: "From the North West Angle of Nova Scotia, viz. That Angle which is formed by a Line drawn due North from the Source of Saint Croix River to the Highlands. . . ." Toward the end of Article 2 the line is defined from the source of the River St. Croix "directly North to the aforesaid Highlands."
 16. From the "North Line" to the northwesternmost head of the Connecticut River (Halls Stream) the boundary was defined in the following language: "From the North West Angle of Nova Scotia, viz. That Angle which is formed by a Line drawn due North from the Source of Saint Croix River to the Highlands along the said Highlands which divide those Rivers that empty themselves into the River St. Lawrence, from those which fall

into the Atlantic Ocean, to the Northwestern-most Head of Connecticut River." This portion of the boundary is thus defined as "Highlands" constituting a watershed between the St. Lawrence and the Atlantic drainage basins.

17. That portion of the boundary now in Halls Stream was defined from the "Highlands" portion of the boundary "to the Northwestern-most Head of Connecticut River: Thence down along the middle of that River to the forty fifth Degree of North Latitude."
18. The 45th-parallel boundary was defined from the Connecticut River in the following language: ". . . to the forty fifth Degree of North Latitude; From thence by a Line due West on said Latitude until it strikes the River Iroquois or Cataraguay."
19. The boundary in the St. Lawrence River ("the River Iroquois or Cataraguay") and Lakes Ontario, Erie, and Huron was defined throughout as "the middle" of the river, the lakes, and the "water communications" between the lakes, "to the Water Communication between that Lake [Huron] and Lake Superior."
20. The boundary in Lake Superior was defined from "the Water Communication between that Lake [Huron] and Lake Superior, thence through Lake Superior Northward of the Isles Royal & Phelipeaux to the Long Lake."
21. The boundary from Lake Superior to the northwesternmost point of the Lake of the Woods was defined as follows: "Thence through the Middle of said Long-Lake, and the Water Communication between it & the Lake of the Woods, to the said Lake of the Woods; Thence through the said Lake to the most Northwestern Point thereof." From that point the boundary was to proceed "thence on a due West Course to the River Mississippi" (the source in Lake Itasca, however, is actually to the south and east of the Lake of the Woods) and down the Mississippi River.
22. Miller, *Treaties*, Vol. 2, pp. 151-56; notes, pp. 156-57.
23. *Ibid.*, pp. 245-67; notes, pp. 267-74.
24. Article 5 provided for two commissioners to "decide what River is the River St. Croix intended by the Treaty" and to "particularize the Latitude and Longitude of its mouth and of its Source."
25. The Jay Treaty did *not* fix any part of the boundary on the 49th parallel of latitude. Article 4 provided, however, that because it was "uncertain whether the River Mississippi extends so far to the Northward as to be intersected by a Line to be drawn due West from the Lake of the woods in the manner mentioned in the Treaty of Peace" [1783], measures were to be taken "for

making a joint Survey of the said River, from one Degree of Latitude below the falls of St. Anthony to the principal Source or Sources of the said River." It further provided "that if on the result of such Survey it should appear that the said River would not be intersected by such a Line as is above mentioned; The two Parties will thereupon proceed by amicable negotiation to regulate the Boundary Line in that quarter . . . according to Justice and mutual Convenience, and in Conformity, to the Intent of the said Treaty."

26. Miller, *Treaties*, Vol. 2, pp. 427-28; notes, pp. 428-29.
27. The explanatory article to Article 5 of the Jay Treaty released the Commissioners from the obligation "to particularize . . . the Latitude and Longitude of the source of the River which may be found to be the one truly intended in the . . . Treaty of Peace, under the name of the River St. Croix." It granted them liberty to describe the river in another manner. Measures were to be "concerted . . . to erect and keep in repair a suitable monument at the place ascertain'd and described to be the source of the said River St. Croix."
28. Miller, *Treaties*, Vol. 2, pp. 430-31; notes, pp. 431-32.
29. The Commissioners decided "the River truly intended under the name of The River *Saint Croix*" to be the river whose mouth "is in *Passamaquaddy Bay* at a point of Land called *Joe's Point*" and whose source is in a stream "having the Indian name of *Chiputnaticook* or *Chibnitcook*." The river was "designated" on the map accompanying the declaration of the Commissioners. It is the river known as the Schoodic or Schoodiac (which had been claimed by Great Britain to be the "St. Croix") rather than the Magaguadavic (which had been claimed by the United States to be the "St. Croix"). For a full account of the proceedings of the Commissioners which resulted in the declaration of October 25, 1798, see Moore, *International Adjudications, Modern Series*, Vols. 1 and 2. For a map showing the rivers and the several claims, see C. O. Paullin, *Atlas of the Historical Geography of the United States*, plate 91-C.
30. Miller, *Treaties*, Vol. 2, pp. 574-82; notes, pp. 582-84.
31. Article 4 of the Treaty of Ghent provided that Commissioners should decide the *sovereignty* of the several islands in *Passamaquoddy Bay* and of the Island of Grand Menan in the Bay of Fundy. It was *not* provided that the Commissioners should fix upon a specific boundary line in the waters between the islands.
32. Article 5 of the Treaty of Ghent provided for two commissioners

to ascertain and determine (1) "that point of the Highlands lying due North from the source of the River St. Croix, and designated in the former Treaty of Peace . . . as the North West Angle of Nova Scotia" and (2) "the North Westernmost head of Connecticut River." It furthermore provided that they "shall cause the boundary . . . from the source of the River St. Croix to the River Iroquois or Cataraguay [St. Lawrence] to be surveyed and marked" and that they "shall make a map of the said boundary." Article 5 was in error in stating that the 45th-parallel boundary had not previously been surveyed, as it had been surveyed and marked by Vallentine and Collins in 1771-74, as the New York-Quebec provincial boundary.

With reference to earlier attempts to settle questions relating to these portions of the "northeastern boundary" (the unratified convention of May 12, 1803, and negotiations in 1807), see Miller, *Treaties*, Vol. 3, p. 326; also Vol. 5, p. 18.

33. Article 6 of the Treaty of Ghent provided that Commissioners shall designate the boundary from the 45th parallel, through the middle of St. Lawrence River and Lakes Ontario, Erie, and Huron, "to the water communication between that Lake [Huron] and Lake Superior."
34. Article 7 of the Treaty of Ghent provided that the Commissioners appointed under Article 6 should also determine the boundary "which extends from the water communication between Lake Huron and Lake Superior to the most North Western point of the Lake of the Woods;—to decide to which of the two Parties the several Islands lying in the Lakes, water communications, and Rivers . . . do respectively belong." The Commissioners were, furthermore, to "particularize the Latitude and Longitude of the most North Western point of the Lake of the Woods."
35. Miller, *Treaties*, Vol. 2, pp. 655-56; notes, pp. 656-57.
36. The Commissioners, under Article 4 of the Treaty of Ghent, decided that Moose Island, Dudley Island (now called Treat Island), and Frederick Island (now called Dudley Island) belong to the United States and that all other islands in Passamaquoddy Bay and the Island of Grand Menan in the Bay of Fundy belong to Great Britain. See Moore, *International Adjudications, Modern Series*, Vol. 6.
37. Miller, *Treaties*, Vol. 2, pp. 658-61; notes, pp. 661-62.
38. Article 2 of the Convention of October 20, 1818, defined the boundary from the northwesternmost point of the Lake of the

Woods to be a line drawn "along the forty Ninth Parallel of North Latitude, or, if the said Point shall not be in the Forty Ninth Parallel of North Latitude, then that a Line drawn from the said Point due North or South as the Case may be, until the said Line shall intersect the said Parallel of North Latitude, and from the Point of such Intersection due West along and with the said Parallel . . . to the Stony Mountains." The boundary was surveyed and marked by a joint commission, 1872-74, which made its final report May 29, 1876. The western terminus, at the summit of the Rocky Mountains, had previously been fixed by the commission which had established the boundary to the west of the summit of the Rocky Mountains (see notes 57 and 61).

39. Article 3 of the Convention of October 20, 1818, embodied no attempt to fix a boundary to the west of the Stony [Rocky] Mountains; instead it provided "that any Country that may be claimed by either Party on the North West Coast of America, Westward of the Stony Mountains [the 'Oregon Country'] shall . . . be free and open, for the term of ten Years from the date of the Signature of the present Convention, to the Vessels, Citizens, and Subjects of the Two Powers." See Miller, *Treaties*, Vol. 5, pp. 18-19. With reference to "joint occupation of the Oregon country," a term which is somewhat inappropriately employed by some historical writers, see also Bemis, *A Diplomatic History of the United States*, p. 273.
40. With reference to the "voluminous and complicated" reports and annexed documents of the Commissioners appointed under Article 5 of the Treaty of Ghent, see the Convention of September 29, 1827, Article 2 (Miller, *Treaties*, Vol. 3, p. 320); see also the notes, *ibid.*, p. 327.
41. The Commissioners, under Article 5 of the Treaty of Ghent, after sitting more than five years, could not agree on matters referred to them nor on a general map exhibiting their claims.
42. The "North Line" or meridian of the source of the St. Croix was run and marked (an "exploring line") by surveyors in 1817 and 1818, under Article 5 of the Treaty of Ghent.
43. Miller, *Treaties*, Vol. 3, pp. 65-69; notes, pp. 69-75.
44. The Commissioners, under Article 6 of the Treaty of Ghent, decided and made declaration of a line from the 45th parallel and the St. Lawrence through Lakes Ontario, Erie, and Huron and indicated the line on a series of maps. See Miller, *Treaties*, Vol. 3, pp. 69-70; with reference to the original maps and facsimile reproductions, see *ibid.*, pp. 71-73.

45. Miller, *Treaties*, Vol. 3, pp. 309-10; notes, pp. 310-14.
46. The Convention of August 6, 1827, continued indefinitely in force all provisions of Article 3 of the Convention of October 20, 1818, in regard to the "Oregon country." See Miller, *Treaties*, Vol. 5, pp. 19-20.
47. Miller, *Treaties*, Vol. 3, pp. 319-23; notes, pp. 323-85.
48. Three questions which were in dispute (the Commissioners under Article 5 of the Treaty of Ghent not having reached agreement in 1822) were submitted to the arbitration of the King of the Netherlands:

(1) How far north on the meridian of the source of the St. Croix River was to be found that point in the "Highlands" which was designated in the Treaty of 1783 as "the North West Angle of Nova Scotia";

(2) What was the northwesternmost head of the Connecticut River; and

(3) Whether the boundary should follow the true 45th parallel (British claim) or the line surveyed in 1771-74 by Valentine and Collins (American claim).

For citations to the complete history of the settlement of north-eastern boundary questions, see Miller, *Treaties*, Vol. 3, pp. 324-25. With regard to Mitchell's Map of North America and Map A, see Miller, *Treaties*, Vol. 3, pp. 328-51 and 351-56 respectively.

49. Regarding the separate reports of the American and British Commissioners under Article 7 of the Treaty of Ghent, see Miller, *Treaties*, Vol. 4, pp. 415-16.
50. Regarding the points on which the two Commissioners did not agree in 1827, see Miller, *Treaties*, Vol. 4, pp. 416-20. Regarding the maps which they submitted see *ibid.*, pp. 421-26. The same maps were subsequently used by Webster and Ashburton in 1842.
51. Miller, *Treaties*, Vol. 3, pp. 359-69.
52. The award expressed a definite opinion relating to the northwest head of the Connecticut River (in favor of the British contention—not the present line); on the other two questions it made only a recommendation.

The award ("decision") of the King of the Netherlands failed of acceptance by the United States, and the British Government withdrew its offer to accept it (Miller, *Treaties*, Vol. 3, pp. 371-79).

53. Miller, *Treaties*, Vol. 4, pp. 363-72; notes, pp. 372-477.
54. Article 1 of the Webster-Ashburton Treaty defined the boundary from the source of the St. Croix to the St. Lawrence River. Since the meridian boundary of the source of the St. Croix had been

- surveyed in 1817 and 1818 (under Article 5 of the Treaty of Ghent), the Webster-Ashburton Treaty simply stipulated that the boundary should follow that surveyed line to the St. John River (which point, in effect, was thus adopted as if it were the "North West Angle of Nova Scotia" of the 1783 treaty); thence it followed a compromise line, which actually gave the United States less territory than it would have had by the award of 1831. Article 6 provided for the survey and demarcation of the boundary between the source of the St. Croix and the St. Lawrence River. See the notes in Miller, *Treaties*, Vol. 4, pp. 378-414.
55. Article 2 of the Webster-Ashburton Treaty defined the boundary from the foot of Neebish Rapids, through Lake Superior, and thence to the northwesternmost point of the Lake of the Woods. This is the portion of the boundary upon which the Commissioners under Article 7 of the Treaty of Ghent had not reached agreement. See the notes in Miller, *Treaties*, Vol. 4, pp. 414-28; regarding the northwesternmost point of the Lake of the Woods, see pp. 428-32.
 56. Miller, *Treaties*, Vol. 5, pp. 3-5; notes, pp. 5-101.
 57. The 1846 treaty continued the 49th parallel from its 1818 terminus westward "to the middle of the channel which separates the continent from Vancouver's Island; and thence southerly through the middle of the said channel, and of Fuca's Straits to the Pacific Ocean." Regarding the indefiniteness of the water boundary definition in the 1846 treaty see Moore, *International Arbitrations*, Vol. 1, pp. 197-98.
 58. Miller, *Treaties*, Vol. 5, pp. 905-6; notes, pp. 906-28; map facing p. 920.
 59. Horseshoe Reef in Lake Erie near Buffalo, less than an acre of land under water, surrounded entirely by Canadian waters, was ceded to the United States in 1850 in order that the latter might build a lighthouse. Under the Treaty of 1908 the boundary was shifted to the west of Horseshoe Reef, placing the reef and surrounding waters within the United States. The light was discontinued in 1919.
 60. Malloy, *Treaties*, Vol. 1, pp. 658-59.
 61. The American originals of the seven map sheets indicating the boundary on the 49th parallel, from the summit of the Rocky Mountains to the Gulf of Georgia, as surveyed and demarcated by the commissioners under Article 1 of the treaty of 1846, are now in the National Archives of the United States. Regarding the work of the commissioners see International Boundary Com.,

U.S. and Canada, *Report . . . Gulf of Georgia to the Northwesternmost Point of Lake of the Woods*, pp. 208-9. The eastern terminus of this section of the boundary, at the summit of the Rocky Mountains, was fixed on the continental divide; that point is now marked by Monument No. 272 (Gulf of Georgia to the northwesternmost point of the Lake of the Woods), in $114^{\circ} 04' 01.96''$ west longitude. British Columbia and Alberta meet at that point.

62. 17 Stat., pp. 863-77; 18 Stat., Pt. 2, Public Treaties, pp. 355-68.
63. "The question as to whether the line should be drawn southerly through Rosario Strait, which was the contention of the British Government, or through Haro Strait (Canal de Haro), as claimed by the United States, was submitted to the German Emperor for decision." Miller, *Treaties*, Vol. 5, p. 101; see also sources cited therein, pp. 100-101.
64. Malloy, *Treaties*, Vol. 1, pp. 716-17.
65. The decision of the German Emperor was that the boundary line should be drawn through Haro Strait. The award was promptly accepted. See Moore, *International Arbitrations*, Vol. 1, pp. 227-31.
66. 18 Stat., Pt. 2, Public Treaties, pp. 369-71.
67. By the 1873 protocol the boundary was specifically defined from the west side of Point Roberts (the western land terminus of the 49th-parallel boundary), through the waters of the Strait of Georgia, Haro Strait, and the Strait of Juan de Fuca, to the Pacific Ocean. The boundary line was traced on four identical charts, two of which were retained by each government; the United States originals are in the National Archives. For a facsimile of the chart see Moore, *International Arbitrations*, Vol. 1, facing p. 231.
68. 27 Stat., pp. 955-57.
69. Although ownership of the islands was determined in 1817, no step was taken to mark the water boundary in Passamaquoddy Bay until 1891. Article 2 of the 1892 treaty provided for appointment of two commissioners "to determine upon a method of more accurately marking the boundary line between the two countries in the waters of Passamaquoddy Bay in front of and adjacent to Eastport, in the State of Maine, and to place buoys or fix such other boundary marks as they may determine to be necessary." The commissioners agreed only in part and submitted separate reports to their governments. See International Boundary Com., U.S. and Canada, *Report . . . Source of the St. Croix River to the Atlantic Ocean*, pp. 151-57.

70. 35 Stat., pp. 2003-14; also U.S. *Treaty Ser.*, No. 497. The convention provided "for the more complete definition and demarcation" of the entire boundary, from the Atlantic to the Pacific. Articles 1 to 8 dealt with the boundary in eight sections; each article, except Articles 4 and 7, provided that each country should appoint "an expert geographer or surveyor to serve as Commissioners." Article 7 provided that the commissioners then engaged in remonumenting the 49th-parallel boundary west of the Rocky Mountains should continue their work; actually they were appointed as commissioners on all sections of the boundary except the St. Lawrence and the Great Lakes (see International Boundary Com., U.S. and Canada, *Report . . . Gulf of Georgia to the Northwesternmost Point of Lake of the Woods*, pp. 191-93 and 16-18).
71. Article 1 formally adopted the portions of the boundary "in the waters of Passamaquoddy Bay from the mouth of the St. Croix River to the Bay of Fundy," upon which the commissioners under the convention of 1892 had agreed, and provided for the delimitation of the remainder of the line. The boundary established by the commissioners under Article 1 of the 1908 treaty, "by a connected series of six straight lines" from T.P. 1 to T.P. 7, remains unchanged; the remainder of the boundary upon which the commissioners reached agreement was modified in 1910. See the map, *supra*, p. 187 (Fig. 24). See also International Boundary Com., U.S. and Canada, *Report . . . Source of the St. Croix River to the Atlantic Ocean*, p. 157, and map at p. 81.
72. Article 2 provided for accurate surveying and mapping of the boundary in the middle of the St. Croix River, and for the determination of the nationality of each island in the river which had not hitherto been established.
73. Article 3 provided for acceptance of the remonumenting of a portion of the boundary between the source of the St. Croix River and the St. Lawrence River between 1842 and 1849 and directed that additional monuments and marks be established wherever necessary.
74. Article 4 authorized and empowered "the existing International Waterways Commission" to ascertain and reestablish the boundary in the St. Lawrence River and the Great Lakes; to deviate from the 1842 treaty line in order to take account of the cession of Horse Shoe Reef to the United States in 1850; and "in their discretion" to adopt a series of connecting straight lines, following generally the course of the curved lines indicated as the boundary on the official charts under the 1842 treaty.

75. Article 5 provided that boundary commissioners "reestablish and fix the actual location" of the boundary from the mouth of Pigeon River (in Lake Superior) to the northwesternmost point of the Lake of the Woods.
76. Article 6 provided that commissioners relocate and repair monuments between the northwesternmost point of the Lake of the Woods and the summit of the Rocky Mountains and establish additional monuments and marks as necessary; the agreement of commissioners in 1876 that the boundary follow the actual curvature of the 49th parallel between monuments was recognized, and intermediate monuments subsequently established were therefore to be placed on the 49th parallel and not on the straight lines connecting the existing 388 monuments.
77. Article 7 provided that the commissioners who had been engaged since 1902-3 in renewing monuments and placing additional monuments on the 49th-parallel boundary west of the Rocky Mountains should complete their work. See International Boundary Com., *Report . . . Gulf of Georgia to the Northwesternmost Point of Lake of the Woods*, pp. 29-32, 194ff.
78. Article 8 provided that commissioners fix the boundary from the 49th parallel to the Pacific Ocean by a series of connecting straight lines.
79. The Treaty of January 11, 1909, regarding boundary waters did not define or modify any portion of the boundary. "To prevent disputes regarding the use of boundary waters and to settle all questions which are now pending . . . involving the rights, obligations, or interests of either in relation to the other or to the inhabitants of the other, along their common frontier, and to make provision for the adjustment and settlement of all such questions as may hereafter arise" an "International Joint Commission" was created (Article 7). The commission has final authority in all cases involving the use or diversion of boundary waters or of rivers crossing the boundary (Articles 3, 4, and 8); special provisions relate to the St. Mary and Milk rivers (Article 6). The two governments may also refer to the commission for examination and report "any other questions or matters of difference arising between them . . . along their common frontier" (Article 9).
80. 36 Stat., pp. 2477-80; U.S. *Treaty Ser.* No. 551.
81. The 1910 treaty established the boundary by a series of seven connected straight lines from T.P. 7 "lying between Treat Island and Friar Head, and extending thence through Passamaquoddy

Bay and to the middle of Grand Manan Channel" at T.P. 14. See International Boundary Com., U.S. and Canada, *Report . . . Source of the St. Croix River to the Atlantic Ocean*, p. 157, and map at p. 81.

82. 44 Stat., pp. 2102-7; U.S. *Treaty Ser.*, No. 720. Article 4 provided "for the maintenance of an effective boundary line between the United States and the Dominion of Canada and between Alaska and the Dominion of Canada" and empowers and directs the commissioners appointed under the 1908 treaty to inspect the boundary periodically, to repair damaged monuments and buoys, to keep boundary vistas open, to move monuments when necessary, and to maintain at all times an effective boundary. The International Waterways Commission which, under Article 4 of the 1908 treaty, reestablished the boundary in the St. Lawrence River and the Great Lakes, went out of existence in 1915; a single International Boundary Commission, consisting of one commissioner appointed by each country, is responsible under the 1925 treaty for the maintenance of the entire boundary of both the United States and Alaska with Canada.
83. When the surveying, mapping, and demarcation of the boundary under the 1908 and 1910 treaties were completed, it was found that the 1910 terminus in the middle of Grand Manan Channel (T.P. 14) was less than three nautical miles distant from the shore line of Grand Manan Island and from the State of Maine, thereby leaving a small zone of waters of controvertible jurisdiction; Article 3 of the 1925 treaty therefore extended the boundary by a single straight line to a point three nautical miles from each shore line.
84. The surveys made under the 1908 treaty had unexpectedly revealed that the boundary in Northwest Angle Inlet of the Lake of the Woods, established by the treaties of 1783 and 1842, was intersected at five points by the meridian boundary extending from the northwesternmost point of the Lake of the Woods south to the 49th parallel established in 1872 under the treaty of 1818, and that two small areas of United States waters in the lake were entirely surrounded by Canadian waters. Article 1 of the treaty of 1925 provided for the adoption of the southern point of intersection of the two lines in lieu of the original northwesternmost point. See *supra*, p. 48, Figure 5(c). For the exact latitude and longitude of this point, recomputed on the "North American datum of 1927," see Miller, *Treaties*, Vol. 4, p. 432.
85. The joint commission which made a report on May 29, 1876,

upon the demarcation of the 49th-parallel boundary east of the Rocky Mountains, stipulated that the boundary "has the curvature of a parallel of 49° north latitude" in the intervals between the 388 boundary monuments which had been erected. The commission under the 1908 treaty had established many additional boundary monuments on the 49th parallel, the average interval being $1\frac{1}{8}$ miles. Article 2 of the treaty of 1925 took account of the fact that the deviation of the 49th parallel from the straight line joining adjacent monuments averaged only about 4 inches and in no case exceeded 1.8 feet; it therefore provided that the boundary shall consist "of a series of right or straight lines joining adjacent monuments as now established or re-established. . . ."

Appendix C

FRONTIER TRAFFIC PROVISIONS OF ANNEX A TO THE TREATY OF COM- MERCE BETWEEN HUNGARY AND YUGOSLAVIA CONCLUDED JULY 24, 1926¹

ANNEX A PROVISIONS CONCERNING SPECIAL PRIVILEGES GRANTED TO FRONTIER TRAFFIC

In order to afford reciprocal traffic between the frontier zones the facilities required for daily needs, the Contracting Parties have agreed on the following Articles:

Article 1

Territories extending on either side of the frontier, the exact extent of which shall be determined in conformity with the provisions of Article 17, shall be considered as frontier zones. As far as possible they shall follow administrative boundaries.

In principle, the breadth of the frontier zone shall be ten kilometres on either side. Nevertheless taking account of local needs, it may be extended or restricted by common agreement, but shall not in any case exceed fifteen kilometres in breadth.

Article 2

In frontier traffic, the articles and products enumerated below coming from the frontier zone of either Contracting Party and brought into the frontier zone of the other Party to meet the ordinary daily needs of the inhabitants of that zone shall, if conveyed in quantities corresponding to the requirements of such inhabitants, be free of all Customs duties and all import and export charges:

- (1) Hay, straw, grass for cattle, dried leaves, moss and reeds;
- (2) Fresh vegetables;
- (3) Fresh milk and curdled milk;
- (4) Firewood, wood charcoal, peat, peat charcoal;

¹ League of Nations, *Treaty Ser.*, No. 2222, Vol. 97 (1929-30), pp. 117-29.

(5) Building stone, slag, gravel, sand, plaster, marl, clay, earth for pottery and all other kinds of common earth;

(6) Ground ashes, natural fertilisers, yeast cake, grape marc, emery in pieces, residue of pressed oleaginous fruits and oil-seeds;

(7) Cereal flour, bread and ordinary pastry in quantities not exceeding 10 kg., butter, cream and cheese in quantities not exceeding 2 kg., meat and fresh fish in quantities not exceeding 5 kg., live and slaughtered poultry, namely: 4 hens, 4 ducks, 1 goose, 1 turkey, 50 eggs, 20 kg. of fresh fruit;

(8) Prepared medicaments purchased by the inhabitants of the frontier zone of either Contracting Party in the pharmacies of the frontier zone of the other Party on production of medical prescriptions, and ordinary medicaments the sale of which is freely allowed in pharmacies, in quantities necessary for personal requirements.

Exemption from Customs duties and other Customs charges shall not apply to the above-mentioned articles when they are imported by post.

Article 3

In frontier traffic, the articles enumerated below may be temporarily imported and re-exported free of Customs duties and import and export charges, without previous authorisation on the part of the central authorities, and without any cash deposit being required:

(1) Vehicles of all kinds with their teams, draught animals and pack animals with their equipment, when used for conveying persons and goods into the frontier zones, and animals for weighing or for temporary work;

(2) Machines and tools transported from either frontier zone into the other for temporary use;

(3) Tools for agricultural work and work in forests and other articles for the daily use of the inhabitants of the frontier zone of either Contracting Party imported into the frontier zone of the other to be repaired therein, and also when re-imported after being repaired;

(4) Cereals and oleaginous fruit imported by the inhabitants of the frontier zone of either Contracting Party into the zone of the other to be ground or pressed for their own requirements, and the products obtained from these raw materials;

(5) Sacks, barrels, tins, baskets and other packings already used for the transport or packing of goods, whether exported full and imported empty, or exported empty and re-imported full.

As regards receptacles which require to bear an official stamp, the Contracting Parties have agreed to recognise reciprocally in frontier

traffic the stamp affixed by the authority of the other Contracting Party.

No special registration is required in the case of the above-mentioned articles with the exception, however, of steam or motor agricultural machinery (locomobiles, ploughs, harrows, threshers, mowing machines and others), which must be registered by the Customs offices.

Article 4

Livestock (oxen, sheep, goats, horses, pigs) driven from the frontier zone of either Contracting Party into the territories of the other for pasturage shall be admitted free of all Customs duties and all charges on import and export on condition that they are returned within a previously fixed period, which shall not exceed six months.

Exemption from import and export Customs duties shall likewise extend to the young dropped by animals and to the products of livestock driven to pasture, namely:

(1) Calves, kids, lambs, colts and pigs born while the animals are in the other territory for pasturage, in proportion to the number of full grown animals declared at the time of departure;

(2) Cheese and butter in quantities not exceeding for each day: butter, per cow, 1.16 kg.; per goat, 0.032 kg.; cheese, per cow, 0.29 kg.; per goat, 0.058 kg.; per sheep, 0.029 kg.

Provided they are not in excess of the said quantities, the cheese and butter produced while the livestock is in the territory of the other Contracting Party, whether this produce is imported or exported while the animals are in the said territory for pasturage, or afterwards, within a period of one month, shall be exempted from Customs duty.

The Contracting Parties reserve the right to require security for Customs duties, but they agree that the deposit of the amount of such duties shall not be required in money.

Article 5

Physical persons (landowners and tenants) or juristic persons (churches, autonomous corporations) habitually resident in the frontier zone of either Contracting Party and possessing land in the frontier zone of the other Contracting Party (extra-frontier landowners) and the members of their families and their assistants (servants, employees, workmen), shall have the right to transport from their dwellings to their land and vice-versa, free of all Customs duties and all import and export charges, the following objects, namely;

(a) Pack and draught animals and livestock driven to pasture.

The livestock driven to pasture must be driven back each day. The special provisions contained in Article 9 of the Provisions concerning epizootic diseases shall apply to livestock which are not driven back each day.

(b) Agricultural implements, tools and ploughing machines; forestry tools and implements for the production and transport of wood; Vine poles, dressing, pumps and pulverisers, including piping;

Cellar utensils, namely: pails, vats, barrels, barrel-taps, wooden and cork bungs, barrel brushes, œnometers, racking pipes and pumps, coopers' hammers and mallets, coopers' knives, wooden and iron hoops, levers, and sulphur for the sulphurisation of barrels;

All kinds of appliances for destroying insects harmful to agriculture, provided such appliances are allowed into the territory of the Contracting Party concerned.

All the above-mentioned articles, including the necessary means of transport, may be transported in quantities sufficient for the purpose;

(c) Provisions necessary for agricultural workers;

(d) Seeds necessary for sowing the land in question;

(e) Agricultural produce harvested on the land, including wine, and the products of livestock-rearing.

Extra-frontier land-owners whose lands are not intersected by the frontier line may, however, benefit by this privilege only until December 31, 1928.

Cereals may be transported in a winnowed state, and maize may also be shelled.

(f) Necessary means of transport.

Agricultural produce must be transported into the zone habitual residence by March 31 of the following working year; wine by November 30 of the harvest year; implements and non-consumable articles must be brought back into the frontier zone from which they were taken by December 31 of each working year. After that date only articles which have been declared as stock at the time of issue of the extra-frontier landowner's certificate, and provided they are entered therein, may remain within the other frontier zone.

Article 6

Inhabitants of either frontier zone who wish to avail themselves of the privileges granted to them under the present Provisions must be supplied with a "frontier permit."

Frontier permits shall be drawn up in the languages of the two countries and shall contain an accurate description of the holder

in accordance with the regulations in force for passports. They shall indicate the routes and roads by which the bearer may cross the frontier. Frontier permits shall be valid for six months.

Children under fourteen years of age accompanied by adults in possession of frontier permits are not required to show a frontier permit.

Frontier permits shall be issued in the Kingdom of Hungary by the administrative authorities of first instance or by the competent police authorities and in the Kingdom of the Serbs, Croats and Slovenes by the police authorities of the district or by the State frontier commissariat in whose area the person is habitually resident.

Frontier permits shall be issued only to nationals of the Contracting Parties who are habitually resident in the frontier zone, to whom no objection is raised by the police, who do not constitute a danger to national or public security and who are not guilty of offences against the fiscal regulations.

Article 7

Extra-frontier landowners and tenants shall be provided with special frontier permits in booklet form. These special frontier permits shall contain the information necessary for the Customs supervision of the working of their lands.

They may be valid for one year and shall be issued by the same authorities and under the same conditions as ordinary frontier permits, but they shall be based on a certificate establishing their status as extra-frontier landowners and issued by the competent authority of the other State in which the lands of such persons are situated. These certificates shall be issued free of charge.

Special frontier permits may be issued only to physical persons and the representatives of juristic persons who are at present landowners or tenants or who acquire lands either *inter vivos* or by succession to persons whose legal successors they may be, in conformity with the laws of the State in whose territory the headquarters of the extra frontier landowner's undertaking are situated.

Tenants of lands may avail themselves of the privileges granted to extra-frontier landowners only if their lease was signed before the entry into force of the present provisions and only until the expiry of their present lease, which may not however exceed three years as from the entry into force of the present Provisions.

Article 8

In cases of emergency, especially in the event of an accident, physicians, veterinary surgeons and certificated midwives authorised to

practise their profession and in possession of a frontier permit may pursue their calling in the neighbouring frontier zone of the other country, provided they have received special authorisation. Whilst practising their profession, they shall be subject to the laws and regulations in force in that zone. They shall be entitled to cross the frontier for the purposes of their profession, by all roads at any hour of the day or night, even on bicycles or motor-bicycles or in motor cars, accompanied by the drivers of such vehicles (coachmen or chauffeurs) without being required to stop at a Customs Office.

They may carry with them, free of Customs duties, the articles necessary for the exercise of their profession (instruments, bandages, medicaments), in quantities corresponding on each occasion to the needs of the persons requiring their assistance.

The Customs authorities of both Parties shall be required to draw up by common agreement detailed regulations concerning these facilities.

Article 9

In urgent and important cases the frontier control officials may, by a summary procedure, issue to inhabitants of the frontier zones "frontier passes" authorising them to cross the frontier and remain three days in the frontier zone of the other Contracting Party. Such "passes" shall be valid for a single crossing of the frontier and must state the purpose of the urgent journey.

As an exception, the validity of frontier passes may be extended for a further period of three days by the competent authorities, mentioned in Article 6, of the Contracting Party in whose frontier zone the holder is temporarily staying.

Article 10

The "frontier permits" must be *visés* by the competent authorities of the other Contracting Party. No charge shall be made for visas.

Frontier permits transmitted officially to the competent authority of the other Contracting Party for the purpose of receiving the necessary visa shall be returned to the issuing authority within eight days at most. Should the visa not be granted, the issuing authority shall be informed of the reasons for the refusal.

The "frontier passes" shall be provided with the visa at the moment of entry into the other State by the frontier control office of that State.

Article 11

As soon as any change occurs in the conditions under which the frontier permit was issued and in particular, should the holder of

the permit no longer be regarded as a thoroughly trustworthy person, the permit shall be withdrawn and the competent authorities of the other Contracting Party shall be notified thereof without delay.

Article 12

In frontier traffic, the frontier may be crossed at all crossing places appointed in accordance with the terms of Article 17 of the present Provisions.

Persons provided with "frontier permits" or "frontier passes" shall be entitled to cross the frontier only at the places indicated in their permits or passes and to move about in the part of the neighbouring frontier zone adjacent to their domicile.

The frontier may be crossed between sunrise and sunset. Permission to cross the frontier shall be granted on all days and in all seasons. Extra-frontier landowners may cross the frontier on several occasions in the same day.

The frontier may be crossed on foot, on horseback, in a carriage, by rail, by boat or by any other vehicles, subject to compliance with the Customs regulations of the country concerned.

Holders of frontier permits and passes shall be entitled to stay in the zone of the other Contracting Party for a continuous period not exceeding three days. Holders of frontier permits regularly proceeding to lands or industrial establishments situated in the frontier zone may be authorised to stay in the zone of the other Contracting Party for a period not exceeding six days. The length of stay shall be indicated in the frontier permit.

When the frontier is crossed, the permit and all articles carried must be submitted to the frontier officials.

Article 13

Persons provided with frontier permits may use all routes intersecting the frontier, whether land routes, or the river routes of the Drave and the Mure, if crossing by these routes is essential for the carrying out of their work. The frontier may be crossed in a carriage or by any other means of locomotion except boats propelled by steam or other power.

The Commission provided for under Article 17 shall, by mutual agreement, designate the land and river routes intersecting the frontier by which crossing shall be authorised and lay down conditions governing the use of these routes.

Article 14

In case of floods or other natural calamities and in case of accidents, the inhabitants of the frontier zones shall be authorised to

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cross the frontier by all routes by day or by night; the same shall apply to fire brigades, with their necessary appliances, in case of fire.

Article 15

The privileges granted under the preceding Articles shall in no way affect the autonomous regulations in force with regard to health measures and prophylactic measures against epizootic diseases and epiphytic diseases, nor shall they affect the regulations in force with regard to the exercise of any State monopoly.

Traffic in livestock shall be governed by the special provisions concerning epizootic diseases.

Article 16

The Contracting Parties reserve the right, in exceptional cases and for reasons connected with the safety of the State or public security, temporarily to suspend frontier traffic either in whole or in part.

The Contracting Party so suspending frontier traffic either in whole or in part, shall notify the other Contracting Party of this measure if possible eight days in advance but at latest at the same time as the measure is adopted.

Article 17

Within fifteen days of the entry into force of the present Provisions, the Contracting Parties shall appoint delegates authorised to fix the exact boundaries of the two frontier zones with due regard for the nature of the ground. It shall also be the duty of the said delegates to fix, on the spot and by mutual agreement, the points at which the inhabitants of the frontier zones may cross the frontier and to agree upon detailed regulations.

They shall also determine the type and detailed wording of the "frontier permits," "special frontier permits" for extra-frontier land-owners, and "frontier passes" in accordance with the provisions of Articles 6, 7 and 9.

Within three months at most from the entry into force of the present provisions the Contracting Parties shall exchange:

An exact description of the internal boundary of their frontier zone;

A list of all places situated in their frontier zone;

A list of crossing places which, by mutual agreement, shall be open to frontier traffic.

Article 18

With a view to ensuring mutual assistance to the frontier authorities in the performance of their duties and with the object of creating

between the frontier authorities on both sides the atmosphere of good neighbourliness which is necessary to the satisfactory working of frontier traffic, the Contracting Parties undertake to authorise the chief officers of their frontier authorities to meet the chief officers of the neighbouring frontier authorities of the other Contracting Party at places in the vicinity of the frontier to be chosen by mutual agreement.

At such meetings the chief officers of the authorities shall endeavour to reach agreement on all details which may arise during the execution of the present Provisions. They shall endeavour to remove any difficulties arising from incidents of slight importance and redress any grievances of the inhabitants of the frontier zones.

Such meetings shall take place regularly every three months and, in addition, whenever the chief officer of any frontier authority deems necessary.

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BIBLIOGRAPHY

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